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21 COLORED SITE PHOTOGRAPHS



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Site: Beloit Corporation, IL

7/1/92  
K.4

Monthly Progress Report  
July 1992

includes: Daily log + Photographs

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# EBASCO

L2010355004/winnings  
Beloit Corp. Beloit  
Superfund/Tech

CHI-IEPA-92-36

August 18, 1992

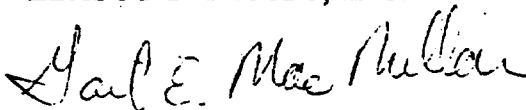
Paul Takacs, Project Manager  
Remedial Project Management Section  
Division of Land Pollution Control  
Illinois Environmental Protection Agency  
2200 Churchill Road, P.O. Box 19276  
Springfield, IL 62794-9276

SUBJECT: Beloit Corp. Progress Report  
LPC No. L2010355004  
State Multi-Site Contract No. BIE-9023

Dear Paul:

Enclosed is the monthly report for July, 1992. This report includes a summary of hours used as of August 14, 1992 for each of the project tasks, a Daily Log summarizing field observations from June 19 to July 31, 1992, a copy of the field log books for this time period, and related photographs. If you have any questions or comments regarding this report, please call me. I will be working in Cincinnati for the next 2 weeks, and can be reached at (513)738-9370.

Sincerely,  
EBASCO SERVICES, INC.



Gail E. MacMillan  
Senior Environmental Engineer

Enclosures

cc. K. Howe

RECEIVED

SEP 22 1992

IEPA/DLPC

EBASCO ENVIRONMENTAL. A Division of Ebasco Services Incorporated

FAIRFIELD EXECUTIVE CENTER  
6120 S. GILMORE ROAD • SUITE 155 • FAIRFIELD, OHIO 45014-5157  
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**BELOIT CORPORATION  
JULY PROGRESS REPORT - OVERVIEW**

From June 29 to July 31, 1992, oversight work at the Beloit Corp. site was performed by Dorothea Downs, Sue Havens, and Kara McGuirk. During this time, Ebasco observed the following activities performed by Warzyn:

- Monitor well inspection and gamma logging
- Soil gas survey
- Electromagnetic and magnetometer surveys at CB Excavating and Soterion
- Drilling and sampling of geotechnical boring GB1
- Drilling and sampling of the following shallow borings:  
SB1, SB8, SB9, SB10, SB11, SB12, SB13, SB14, SB15, SB16, SB17, SB19, SB20, SB21
- Drilling and installation of the following monitor wells:  
W3, W10B, W19, W19B, W20, W20B, W21, W22, W23
- Drilling and sampling of deep borings DB1 and DB4 and the construction of a monitor well in DB4

Ebasco also assisted the IEPA in collecting split samples from particular residential wells.

Field observations are summarized in the Daily Logs (attached). Copies of the field log books are attached together with photographs.

A summary of hours budgeted for the entire project and hours used as of August 14, 1992 is given below.

<u>Task</u>	<u>POPR Hours</u>	<u>Hours Expended as of 8-15-92</u>
1. Work Plan Review	292	255
2. RI Field Oversight	708	563
3. Review Draft RI	96	-0-
4. Review Draft FS	88	-0-
5. Additional Studies	240	142
6. Community Relations	(Not being performed by Ebasco)	
7. Project Cost Control	592	158

Approximately 80% of the 708 hours budgeted for Task 2 (RI Field Oversight) have been expended as of August 14, 1992. Approximately 71% (499 hrs.) of the hours budgeted for Task 2 was used by Dorothea Downs, Sue Havens, and Kara McGuirk for field oversight work, review of site-related documents in preparation for oversight work, travel time to and from the site, and for preparation of Daily Log Summary Reports and labelling of photographs. Approximately 9% (64 hrs.) of the Task 2 hours was used by Gail MacMillan in scheduling and managing field oversight personnel, maintaining communications with the IEPA, for two site visits, and for preparation of the July progress report.

Warzyn informed the IEPA only a few days in advance of the commencement of field work that they planned to follow an accelerated schedule by having two drilling rigs in operation at the same time. Ebasco arranged for the required oversight personnel. However, the short notice time necessitated additional management time for Gail MacMillan to schedule and manage oversight personnel.

It appears that most of the hours planned for Task 2 will be expended by the end of Phase 1 field work. Prior to Phase 2, an estimate of anticipated additional costs and justification will be prepared for IEPA's review and consideration prior to Phase 2 field work.

**OVERSIGHT OF WORK PERFORMED BY WARZYN AT THE BELOIT CORP. SITE  
DAILY LOG FOR JUNE 29 - JULY 31, 1992**

**Prepared by Sue Havens, Dorothea Downs, and Kara McGuirk**

Monday, June 29, 1992

**Oversight Performed by Dorothea Downs**

Dorothea Downs arrived at the Beloit Corporation Rockton Facility in Rockton, Illinois at 7:30 a.m. to perform the IEPA oversight activities from June 29-30, 1992. She was informed at 8:35 a.m., by the Head Security Officer of Beloit Corporation, that she was denied access until the site access agreement has been signed and returned by IEPA. D. Downs returned to her hotel room until she was notified by Paul Takacs of IEPA at 12:00 p.m. that access had been granted and to return to the site.

D. Downs observed the inspection of monitor wells MW-1, MW-7, MW-17, MW-16, MW-9, and MW-10 by Warzyn. The wells were located and noted to be secured with locking devices. Water levels and total depths were recorded. A bailer was flushed up and down in each well for a few minutes to clear the screens and a bailer full of water was retrieved. The majority of the wells contained tan to brown water with visible fines. In MW-1, reddish brown water was recovered. A dark brown precipitate was also noted in many of the wells. Some wells contained foreign vegetative matter at the bottom of the wells which was seen on the bailer when it was retrieved. The water removed from the wells was disposed in a plastic container. All equipment used was decontaminated between each well and prior to leaving the site.

D. Downs also observed the gamma logging of these inspected monitoring wells. High density areas in the wells were identified. This indicated seams of fine grained sediments. The gamma logging was completed on both the inspected PVC and stainless steel wells. MW-9, the shallower well of a well cluster, was not logged.

Prior to D. Downs being granted site access, the Warzyn field team completed inspecting and gamma logging the following wells: W-2, W-4, W-6, W-12, W-13, and W-14.

Staff gauge #3 was also located along the Rock River. The gauge had tipped and was not easily accessible. The Warzyn team is considering relocating the gauge to a more accessible location.

Tuesday, June 30, 1992

**Oversight Performed by Dorothea Downs**

The morning activities included examining existing monitoring wells located off of the Beloit Corporation property. Well G101 was located and inspected. Vegetative matter occupying the bottom 5 ft. of the well was noted. A sample was collected to show the

Warzyn biologist for possible identification. Well G101 was also gamma logged. Wells G102 and G107 could not be located. Wells G108D and G108S were located but were locked and therefore inaccessible at that time.

The afternoon was spent staking locations of the following monitoring wells (W), shallow soil borings (SB), and deep soil borings (DB): W-20, W-21, W-22 (these are all well nests); SB-9, SB-10, SB-11; DB-1, DB-2, and DB-4. The locations were located according to the map of the proposed soil boring and monitoring well locations included in the Final Work Plan.

#### Monday, July 13, 1992

##### **Oversight Performed by Sue Havens**

S. Havens arrived on-site at 2:30 p.m. and joined G. MacMillan observing the soil gas survey at sample locations SG61, 62, 63, 64, 65, and 66. The highest reading measured on the photo-ionizing detector (PID) was 5 ppm at sample location 62. Soil gas sample locations SG61 and SG62 were moved due to construction on the Research and Development Building. SG61 was moved to a location northeast of the Research and Development Building and SG62 was moved slightly north of the original location. The ground was very wet with standing puddles from rain that morning.

#### Tuesday, July 14, 1992

##### **Oversight Performed by Sue Havens**

S. Havens and G. MacMillan arrived at Warzyn field trailers at 7:30 a.m. Field activities were delayed due to hard rain. S. Havens observed drilling and sampling at shallow soil boring SB14. No elevated HNu readings were recorded at this borehole.

##### **Oversight Performed by Dorothea Downs**

D. Downs arrived at the Beloit Site to perform oversight activities from July 14-17, 1992. D. Downs performed residential well sampling at 900 Prairie (Trulls) and 903 Prairie (Lucas's). An MS/MSD was taken at 900 Prairie. The full sample suites were taken at both residents. The water was clear and had no odor.

#### Wednesday, July 15, 1992

##### **Oversight Performed by Sue Havens**

S. Havens observed mud rotary drilling and split spoon sampling at geotechnical borehole GB1. Geotechnical samples were taken at 5, 10, 15, 20, 25, and 30 ft.. After 30 ft., samples were taken at every 2.5 foot intervals as follows: 30-32, 32.5-34.5, 35-37, 37.5-39.5, and 40-42 ft.. A clay layer with a trace of gravel was

encountered at approximately 32 ft. Samples from 32 to 42 ft. were clay.

**Oversight Performed by Dorothea Downs**

Soil gas sampling and soil boring were observed. The soil gas survey indicated 24 ppm during the field screen at Location SG-32. The GC analysis reported 56.4 ppb PCE, 10.3 ppb 1,2 DCE, and 5.4 ppb 1,1 DCA at this location. All the other soil gas samples were non-detect in the areas surrounding the Beloit Corporation plant and storage yard area.

Soil boring SB-15 was located 20 ft. east of SG-32. The HNu did not detect any volatile organics in the soil from this boring. A headspace analysis was performed on each sample and indicated a hit at the 21-23 ft. interval of 1.9 ppm. This sample was sent by Warzyn to the analytical laboratory. The total depth of this hole was 31 ft.. Water was encountered at 28.5 ft. from the ground surface.

The drilling of SB-10 in the sludge spreading area was also observed. Volatile organics were detected at several sampling intervals in this boring. The highest sample screening reading, obtained using an HNu, was 8 ppm. A reading taken from the borehole indicated zero organics. However, during the headspace analysis, readings of between 139 to 354 ppm were obtained with another more sensitive PID. The intervals sampled for analytical data were 5-7 ft. and 29-31 ft.. The headspace readings for each of these were 241 ppm and 286 ppm, respectively. The total depth of SB-10 was 34 ft. and water was intercepted at 28 ft..

The geology of both borings was similar. The top 23-25 ft. is composed of coarse sand and gravel. A silty sand with some fine gravel underlies this layer. The silty sand becomes coarser to a homogenous medium sand unit at about 28 ft. which bares water. The borings were considered complete when water was encountered. A red stain on some of the grains was noted in the material above the silty sand.

Thursday, July 16, 1992

**Oversight Performed by Sue Havens**

S. Havens observed drilling and sampling at geotechnical borehole GB1. Samples were taken at 42.5-44.5, 45-47, 47.5-49.5, 52.5-54.5, 55-57, 57.5-59.5 ft.. A sample was not collected from the 50-52 ft. interval because the sampler could not penetrate the formation. Samples 42.5 through 56 ft. were brown clay with a trace of gravel. Samples 56 through 59.5 ft. were sand and gravelly sand.

**Oversight Performed by Dorothea Downs**

Two soil borings were completed. Soil boring SB-16 near the water tower was drilled to a depth of 25 ft.. The geology was similar to

the other borings. Volatile organics were detected just above the water table at levels below 1 ppm with the HNu in this well. No odor was evident. Water was encountered near 24 ft. The borehole was filled in with soil and bentonite crumbles.

Soil boring SB-11, located in the fibrous sludge area, was also completed. The boring was drilled to 27 ft. The HNu gave readings of between 2 to 3 ppm at 19-21 ft. and 1 ppm at the 7-9 ft. interval. Water was noted at 24 ft. Volatile organics were not detected in samples from deeper than 24 ft. Headspace analysis did not show any volatile organics in either SB-11 or SB-16. Warzyn chose samples at 10 ft. and 20 ft. for laboratory chemical analysis.

Soil boring SB-13 was located in the foundry sand area. The boring was drilled to about 10 ft. before retiring for the day. Foundry sand was noted in the first few ft. of the boring. The HNu did not detect any volatile organics here.

Friday, July 17, 1992.

**Oversight Performed by Sue Havens**

S. Havens observed drilling at geotechnical boring GB1. The mud pump broke down, therefore no samples were taken. S. Havens observed soil gas sampling at SG15. The PID recorded no readings over 2 ppm.

**Recommendations:**

- 1) That a caliper log be run along with natural gamma ray log. Caliper log will show if the borehole has been washed out by mud circulation. If there are areas where the borehole has washed out, the gamma ray log can be corrected for the enlarged borehole.

Note: Wyoming bentonite is being used to drill mud rotary borehole GB1. Wyoming bentonite is high in potassium which could affect the reliability of the gamma ray log. The gamma ray log may not be comparable with gamma ray logs from the ground water quality borings. The groundwater quality borings will be drilled with air.

- 2) That certain locations be resurveyed by the soil gas crew after the ground dries out. The resurveyed locations chosen should be those where contamination is expected. Recommended resurvey sample locations include SG32 and soil gas sample locations near boring SB10. SB32 had VOC readings that may have been minimized by wet soil. Boring SB10 had high head space sample readings. If rechecked locations have higher VOC readings, it is recommended that more locations be rechecked.

**Friday, July 17, 1992 (continued)**

**Oversight Performed by Dorothea Downs**

Soil boring SB-13 in the foundry sand area was completed at 35 ft.. The HNu gave readings of 0.5 and 0.2 ppm in samples near the watertable. The sample giving a reading of 0.2 ppm was sent for chemical analysis. This sample was at 33-35 ft. and was a duplicate. Water was encountered at 33.5 ft..

Soil boring SB-9, which was relocated closer to SB-10, was completed. The geology was similar to that of SB-10. Volatile organics were not detected with the HNu. Headspace analysis indicated volatile organics at 9.8 ppm from the 9-11 ft. interval. This sample was sent for chemical analysis. The IEPA representative collected a sample from 21-23 ft. which had volatile organics at 0.6 ppm according to the headspace analysis. The sample was properly packaged and sent to Weston via Federal Express for Saturday arrival.

**Monday, July 20, 1992**

**Oversight performed by Sue Havens**

S. Havens observed drilling and sampling of geotechnical borehole GB1 and the soil gas survey at locations SG102, SG103, and SG60. At the geotechnical borehole GB1, split spoon samples were taken from depth intervals of 60-62, 62.5-64.5, 65-67, 67.5-69.5, 70-72, 72.5-74.5, 75-77, 77.5-79.5, 80-82, 86.5-88.5 ft. Samples from the 60-67 ft. interval were sand. Samples from the 67.5-75 ft. interval were sand and gravel. Sample 72.5-74.5 ft. was a quartz rich, well rounded and sorted, medium grained sand, stained orange. The orange color may have been from iron staining, although only very minor amounts of mafic or clay minerals were observed in the sample. Head space readings taken on sample 72.5-74.5 ft. were 0 ppm. Sample 75-77 ft. was an orangish brown, medium grained sand. Sample 77.5-79.5 ft. was a fine grained, quartz tan sand. Sample 80-82 ft. was a tan, fine grained sand with isolated areas of iron staining. Sample 86.5-88.5 ft. was a fine grained sand grading into a claying silt. Soil gas samples observed on this date all had PID readings of 0 ppm.

**Oversight Performed by Kara McGuirk**

Kara McGuirk arrived at Beloit Corp. site at 0730. K. McGuirk met with Sue Havens (Ebasco - Denver) and got an update on site activities. Due to the large amount of rain the previous week, the drill crew could not get to the remaining on-site soil boring locations, so Warzyn decided to install shallow monitoring wells. K. McGuirk observed the installation of monitoring wells in the area behind the storage yard (MW-22) and near the boundary of the foundry sand pile (MW-21). Note: The way in which the bentonite powder is allowed to "hydrate on its own" (Warzyn) with only a small amount of water added is unfamiliar to me. I checked with

the QAPP and WP for the stated method of completing the monitoring wells. (QAPP states the bentonite powder can be poured for shallow MW but tremied in for piezometers & deep MW.)

Tuesday, July 21, 1992

**Oversight Performed by Sue Havens**

S. Havens observed further drilling, sampling, and natural gamma ray logging at geotechnical borehole GB1; soil gas surveying at locations SG70, SG69, SG81, SG84, SG94, SG3, SG4, and SG5; and electromagnetic (EM) surveying and magnetometer (Mag) surveying at CB Excavating Company. Soil samples taken at GB1, 90-92 and 95-97 ft. were both fat, gray clay.

Soil gas samples were located and had PID reads as follows:

-SG70 at 914 Watts Avenue behind the tool shed and next to 3 5-gallon jugs of used motor oil: PID = 0.

-SG69 at 91 Watts Avenue next to utility shed and "upgradient" of well W18: PID = 0 to 0.1 ppm.

-SG81 at 905 Watts Avenue next to an asphalt driveway and a dish pan of used oil that had spilled on the ground: PID = 0.1 ppm.

-SG84 at 1004 Watts Avenue behind utility shed: PID = 0.9 to 0.4 ppm.

-SG94 at 1304 Watts Avenue: PID = 0 ppm.

Three SG samples were taken at CB Excavating: samples SG3, SG4, and SG5. Only SG5 had PID readings greater than 0 ppm. PID readings at SG5 ranged from 5.6 to 1.3 ppm.

S. Havens observed natural gamma ray logging at GB1. The log showed good contrast between sands and clay layers. Good log response was observed on clay layer from 32 to 56 ft.

S. Havens observed the EM and Mag survey conducted by Fromm Applied Technologies at CB Excavating. A Geonics EM31 and an EG & G856 proton magnetometer with gradiometer attachment were used for the survey. Proper calibration and survey procedures were followed.

S. Havens observed partial abandonment of GB1. Bentonite slurry was pumped into the borehole to an unknown depth. Warzyn geologist, J. Ramsby, stated that he did not know to what depth the hole had been filled with slurry and no measurements were taken. Surface casing was left in the borehole and the borehole was taped up with duct tape. Warzyn geologist stated that abandonment would be completed in a couple days after bentonite had settled out.

**Tuesday, July 21, 1991 (continued)**

**Oversight Performed by Kara McGuirk**

Kara McGuirk arrived at Beloit Corp. trailer at 0715. Observed installation of MW-20 at a location approximately 15 ft. N of original location. While pouring the sand for the sandpack, Warzyn's measuring tape got trapped in the sand about 17 ft. below ground surface. All attempts to retrieve the tape failed and the final attempt broke the tape, leaving the tape and its weighted end in the hole at a level with the well screen. The hole was abandoned, the PVC risers and stainless steel well screen pulled, and the hole backfilled with bentonite powder. The installation of MW-20 in the new location went smoothly.

K. McGuirk also observed the boring of SB-12, on the south end of the foundry sand pile. No split sample was collected as no field screening (HNU) reading was above 0.4. Note: The split spoon samples are allowed to sit in the open, uncovered, for several minutes prior to the HNU screening. The spoon sample should remain covered until the field screening is completed. Will mention this and rapid backfilling method to Paul Takacs (IEPA) when he arrives on site tomorrow.

**Wednesday, July 22, 1992**

**Oversight Performed by Sue Havens**

S. Havens observed EM reconnaissance of Soterion property, shallow soil boring at SB19, and water purging and sampling at DB1. EM operator, Art Fromm, stated that quonset huts are interfering with EM ability to resolve overhead power lines at Soterion, therefore he was not sure if EM will be able to resolve buried objects.

S. Havens observed drilling of shallow soil boring SB19. This shallow boring was moved from near the Beloit Corp. Research and Development Building to the gravel pit because of soil gas survey results. GC analysis of soil gas sample SG1 showed detections of unknown compounds at this location. T. March, geologist for Warzyn, gave S. Havens samples collected from 1-3 ft. for IEPA laboratory analysis. Sample was of foundry sand. This sample and one sample from SB12, 11-13 ft., were shipped to IEPA lab for analysis. S. Havens also observed purging and water sampling at 39 ft. in borehole DB1.

**Oversight Performed by Kara McGuirk**

Kara McGuirk arrived at the Beloit Corp trailer at 0720. The morning was spent observing the geophysics crew surveying the Soterion property. Art Fromm and his assistant, Ray, performed a preliminary survey of the Soterion property. Due to the metal quonset hut and the numerous overhead power lines, the resolution of the EM survey may be poor. Paul Takacs (IEPA) was on site today. K. McGuirk observed the dual tube rig operations in the

afternoon, until they were shut down by sampling difficulties. S. Havens and K. McGuirk took soil samples to Federal Express for delivery to the lab.

Thursday, July 23, 1992

**Oversight Performed by Sue Havens**

S. Havens observed drilling and sampling at SB20 and SB21. S. Havens took and shipped samples from SB20. Samples for metals, pesticides, PCBs, and semi-volatiles were taken at depth interval 1-3 ft. The sample was foundry sand. Two volatile sample jars were filled with the same foundry sand from the 3-5 ft. sample interval. The driller encountered a metal object at 5 ft. and the hole was abandoned. The rig was moved east approximately 5 ft. and borehole SB21 was drilled to 19 ft. The Warzyn geologist stated that the SB20, 1-3 ft., head space sample had a PID reading of over 400 ppm.

**Oversight Performed by Kara McGuirk**

K. McGuirk was told by Warzyn in the morning that the soil augering rig would be down for repairs until after lunch and that the dual tube rig would be down until sampling difficulties were resolved. K. McGuirk observed the completion of backfilling the geotechnical borehole, GB1. The bentonite slurry that had been poured in several days before had settled to a depth of approximately 14 ft. below ground surface. Bentonite powder was poured down the hole and hydrated via a water hose on the drill rig. The remaining 1 foot of the borehole was backfilled with soil. After lunch, K. McGuirk observed the dual tube rig in operation at DB1. Groundwater samples were collected from approximately 55 ft. (nonqualifying sample, since required amounts of water were not removed prior to sampling), 69 ft., and 81 ft. Low amounts of several VOCs, including 1,1,1-TCA, TCE, 1,1-DCA, toluene, and 1,1-DCE were found in the groundwater samples.

Friday, July 24, 1992

**Oversight Performed by Sue Havens**

S. Havens observed drilling and sampling at SB1. The water table was encountered in the 29-31 ft. sample. A temporary well screen was set at approximately 30 ft. to allow water samples to be collected. The water level was measured at approximately 26 ft. Water was purged (approximately 3 gallons) and two VOA water samples were taken for analysis with the on-site GC.

S. Havens observed the drilling of Well W23. Well W23 was drilled to a depth of 34 ft. and a split spoon sample was taken from 34-36 ft. The purpose of this sample was to determine screen size. The sample was a dry, tan, sandy silt indicating the water table had not been reached. The Warzyn geologist stopped the drilling,

stating that they would see if water would come in over the weekend. S. Havens observed the drilling, purging, and sampling at DB4. The borehole was drilled to 39 ft., approximately 2 gallons of water were purged, and a water sample was taken.

**Oversight Performed by Kara McGuirk**

K. McGuirk observed the drillers driving an outer casing in DB1. A stainless steel cover was spot-welded to the top of the casing. The hole was left this way until a decision could be made whether to sample further. K. McGuirk watched the dual tube rig set up on new location, DB4.

Monday, July 27, 1992

**Oversight Performed by Sue Havens**

S. Havens observed the drilling, purging, and water sampling at DB4; soil gas survey at CB Excavating and the Soterion Facility. S. Havens observed drilling from 39 ft. to 59 ft.. The sample at 49 ft. was skipped because of flowing sands. S. Havens observed a sample taken at 59 ft. after 7 gallons of water had been purged from the borehole. She was informed that a sample was taken at 49 ft. after the borehole had been drilled to 59 ft. S. Havens observed soil gas survey at CB Excavating, 1314 Watts and the Soterion Facility. The following locations were surveyed.

-SG57 located behind CB Excavating Building, the southwest corner of the property, PID = 150 ppm.

-SG95 located in front of CB Excavating Building south of the driveway, PID = 0.3 ppm.

-SG96 located in front of CB Excavating Building south of the driveway and northeast of a wire wrapped culvert, PID = 2.7 ppm.

-SG78 located at the Soterion facility, between 2nd and 3rd quonset hut (counting from north to south), PID = 3 ppm.

At locations SG201, SG202, SG203, SG204, SG206, SG207 no samples were taken for analysis by the GC. All of these locations were on or near the Soterion Property. Highest PID reading was 0.5 ppm at SG201.

S. Havens received these results from the GC operator, M. Pauli, for water samples taken from SB21 and analyzed on Friday 7-24-92.

1.7 ug/l 1,1 DCE  
5.8 ug/l 1,2 DCE  
3.1 ug/l 1,1,1 TCA  
145 ug/l PCE

**Monday, July 27 (continued)**

**Oversight Performed by Dorothea Downs**

D. Downs observed the installation of two monitoring wells, W-23 and W-3, and the abandonment of W-6. The monitoring well, W-23, was constructed as a flush mount with a 10 ft. screen and PVC risers. The screened interval was from 23.5 ft. to 33.5 ft. Number 5 sand was used for the filter pack. A bag of fine sand was placed above this to prevent the bentonite crumbles from sinking into the filter pack. Bentonite crumbles were added to near surface. The protective case for the flush mount was set in a cement bentonite grout. At one point in this well construction, the risers slipped down the well. Several instruments were used to fish the PVC pipe out. Some of these materials were not decontaminated prior to entering the borehole.

Monitoring well W-3 was installed at a depth of 29 ft. A stainless steel screen and PVC risers constructed the well. The well construction was similar to W-23 except this well had a stick-up and bentonite crumbles were brought to the surface.

Well W-6 was abandoned by tremie piping a bentonite slurry to the surface of the well.

**Tuesday, July 28, 1992**

**Oversight Performed by Sue Havens**

S. Havens observed soil gas survey at Soterion, drilling, purging, sampling, natural gamma ray logging, and partial construction of a well at DB4. S. Havens observed soil gas survey at the following locations:

- SG49 located on the west side of railroad tracks behind Taylor Freezer Building, PID = 0.7 ppm.

- SG129 located next to SB10 in the fibrous sludge spreading area, PID = 1.3 ppm.

All other surveyed locations, SG209, SG210, SG211, and SG212 were on or near the Soterion property. No soil gas sample was taken for analysis by GC. The highest PID reading measured was 0.7 ppm from SG211.

S. Havens observed the purging and sampling of DB4 from 103 ft. Four gallons of water were purged from the borehole prior to water sampling. The borehole was drilled to 110 ft. and then purged and sampled again. S. Havens observed the natural gamma ray logging at DB4. The Warzyn Geologist had trouble calibrating the logger. Good response was seen from the clay layer at approximately 80 to 100 ft. and from the silt layer from approximately 32 to 39 ft. Depths are approximate because logging paper being used was not

correct scale and depth was not being marked on log during logging. Geologist had trouble getting a repeat section on the natural gamma ray log. S. Havens observed the partial construction of a well at DB4. Sand pack was started but not finished.

#### **Oversight Performed by Dorothea Downs**

D. Downs performed oversight activities at the Beloit Site from July 28-31, 1992. Soil boring SB-17 near CB excavating, 1314 Watts Avenue, was completed. The boring was located near SG-5 by the fuel oil tanks. The PID at SG-5 did not indicate volatile organics in the soil. The first few ft. of soil appeared to be a fill material. Below this was sand and gravel similar to those found in the other borings. The total depth of the boring was 27 ft. and moist soil was encountered near 25 ft. The HNu did not detect any volatile organics in the soil. The IEPA representative was unable to collect a sample after requesting a sample at this location.

The drilling crew, T47 mobile drill rig, moved to SB-8 on Soterion's property. The boring uncovered a black saturated sand and gravel that smelled of diesel. The HNu recorded 5 ppm in the first spoon. This was the highest hit. The IEPA representative was able to take a sample at the 15-17 ft. interval. The entire boring formation was gray to black in color, including the soil below the watertable. The borehole was completed at 25 ft. A water sample was taken from the open borehole for analysis. An appropriate volume was removed prior to taking the sample.

The headspace analysis for the samples collected at SB-17 and SB-8 indicated volatile organics at varying levels. In SB-8, only one sample showed any volatile organics. The reading was below 1 ppm. The sample near 10 ft. was selected for analysis. In SB-17, the 11-13 ft. sample interval showed the highest volatile organics at 18 ppm. The first two split spoons also had elevated readings. The 11-13 ft. sample and one shallow sample was selected for chemical analysis. The IEPA representative collected a sample at the 15-17 ft. depth interval for chemical analysis. The HNu indicated 1 ppm on this sample.

Drilling at the intermediate monitoring well, W-10B, was also started. The augers were advanced to 30 ft. where they will sit until tomorrow.

#### **Wednesday, July 29, 1992**

#### **Oversight Performed by Sue Havens**

S. Havens observed the completion of the well construction at DB4, soil gas survey at SG130, drilling purging and water sampling at DB1. S. Havens observed the construction of a well in DB4. Prior to the pouring of bentonite chips into the borehole, the depth to the bottom of the screen (measured inside the well pipe) was 76.6 ft. After bentonite chips had been added to the borehole, the

bottom of the screen (measured inside the well pipe) was 75.4 ft. The PVC well pipe did not move up. S. Havens observed the soil gas survey at SG130 located in the fibrous sludge spreading area (PID = 7.5 to 8.0 ppm). S. Havens observed the reentry and deepening of DB1. The borehole was drilled to 102 ft.; then 35 gallons of water were purged and a water sample was collected.

**Oversight Performed by Dorothea Downs**

The installation of W-20B continued. Samples for geotechnical analysis were taken every 1.5 ft. from 28.5 ft. to a depth of 58.5 ft. The well was set at 54.8 ft. with stainless steel riser and screen below the water table. PVC risers were installed above the watertable. Bentonite was used to fill in the borehole in order to set the well at 54.8 ft.. A layer of sand was also placed above the bentonite prior to setting the well. The well was constructed with a 5 ft. stainless steel screen. During the installation of the well, bentonite bridged in the well several times during placement of the seal. Several materials, including steel pipe, poly pipe, and weighted tape measures, were descended into the hole to break the bridge. The cleanliness of these materials may be questionable. A large volume of water was also placed down this well in order to keep a head that would retard sand from flowing into the well. Sand was also lifted out of the well by pumping water into the well.

The development of W-20 was performed. A total of 55 gallons was removed. A bailer and an electric Keck pump were used to remove water. The discharged water was clear with very little sediment. Samples for field parameters were collected, but the analyses were not performed immediately after removal. This may effect the temperatures which in hand can alter the other parameters such as pH and conductivity.

Thursday, July 30, 1992

**Oversight Performed by Sue Havens**

S. Havens observed the natural gamma ray logging and partial abandoning of DB1. The natural gamma ray log showed a good response from the clay from at approximately 80 ft. No repeat section was run to check gamma ray tool response. S. Havens observed the partial abandonment of this borehole. The drilling crew was having trouble removing overshot pipe from the borehole.

**Oversight Performed by Dorothea Downs**

Monitoring well W-19B, located on the Trulls' property, was partially completed. Steady rainfall halted drilling operations in the afternoon. The well was drilled to approximately 30 ft. Samples for geotechnical analysis were collected every 2.5 ft. Water was first encountered around 25 ft. The HNu did not detect any volatile organics.

Friday, July 31, 1992

**Oversight Performed by Sue Havens**

S. Havens observed the drilling crew complete the abandonment of DB1. The crew had problems pulling overshot pipe out of borehole. The bit was left in the borehole and bentonite slurry was pumped to surface.

**Oversight Performed by Dorothea Downs**

Drilling at W19B continued. The well was set at 59.3 ft. A 5 ft. stainless steel screen was installed along with a 10 ft. stainless steel riser attached to the PVC riser which extended to the surface. A bentonite slurry was tremied down, to above the filter pack to the ground surface. A protective casing was also installed.

Monitoring well W-19 was completed just east of W-19B. The well was completed at 27.5 ft. A 10 ft. stainless steel riser and some PVC risers were installed. The filter pack was set 1.5 ft. above the screen to 16 ft. Bentonite crumbles were set to the surface.

**Photolog - Week of July 20**  
**Kara McGuirk**

- Photo #1: MW-22 location, driving split spoon #5 (10-12 ft.).
- Photo #2: MW-22 location, split spoon #6 (12-14 ft.).  
Contents: coarse, dry sand and gravel.
- Photo #3: MW-22 location, setting sandpack in borehole, with  
10 ft. stainless steel well screen and PVC risers  
in hole.
- Photo #4: MW-22 location, augers pulled out of hole, riser  
pipe with wellscreen in hole.
- Photo #5: Terry (Warzyn) taking water level measurements at  
MW-22.
- Photo #6,  
7, 8: Composite of overgrown foundry sand area from MW-21  
location.
- Photo #9: MW-21 location, drillers inserting rods into  
borehole for auguring to 30 ft. to set well.
- Photo #10: Drillers pouring bentonite powder into borehole to  
make seal above sand pack.
- Photo #11: Driller hydrating bentonite powder.
- Photo #12: MW-21 location, inserting protective steel casing  
into bentonite, over the well riser.
- Photo #13: Completed MW-21.
- Photo #14,  
15: Monitoring well location MW-20, drillers using hose  
to blow out water from borehole.
- Photo #16: Soil boring location SB-12, driving split spoon.

**Photolog  
Dorothea Downs**

Photo #1A: Bailing Well G-101 during well survey.  
Time: 9:55 Date: 6/30/92 Facing: East

Photo #2A: Gamma logging well G-101 during well survey.  
Time: 10:05 Date: 6/30/92 Facing: East

Photo #3A: Staking soil boring locations.  
Time: 13:05 Date: 6/30/92 Facing: South

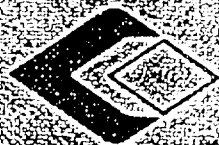
Photo #4A: Deconning sampler and hammering 2nd split spoon at SB-13.  
Time: 8:30 Date: 7/17/92 Facing: North

Photo #5A: Split spoon from 33-35 ft. depth interval at SB-13.  
Time: 8:45 Date: 7/17/92 Facing: North

Photo #6A: Hammering split spoon after drilling with HSA at W-3.  
Time: 13:30 Date: 7/27/92 Facing: Northeast

Beloit Oversight  
8652-142

ERASCO



**LIETZ**

SINCE 1882

**FIELD BOOK**

No. 3152-60

## INDEX

IEPA 8652.142

Beloit Corporation, Rockton, IL

Property of IEPA - Beloit Corp.

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fax ~~4~~

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Ebasco Mgr - Gail MacMillan 513-738-9369

in Cinn; home # - 708-268-1022

Chicago - 312-876-0262 office

Beloit Corp - Michael Radcliffe

Warzyn PM - Kevin Domack - 608-231-4747

Warzyn Persennel: Jim Moser

Ken Quinn - geologist

Holiday INN - 815-389-3481

Gail's # at Whiting: 708-331-4000 (X3160)

fax 312-785-0755 (Fred Teggebar)

field trailer - 608-364-2615

Columbus Office 614-761-2005

Weston/Gulf Coast Lab: 708-534-5200

EBASCO FED EX #: 1358-1360-5

6-29-92

weather:

Sunny, 0-5 mph wind,  $\approx 70^{\circ}\text{F}$

7:30 Arrive at guardhouse at Beloit Corporation. Cliff Dawson, the guard, said he was told not to allow me entrance to the facility. He phoned his boss, who is coming down to talk with me. (D. Downs)

8:25 Talk w/ Dick Snow (Plant Manager). Mike Radcliffe is not at his office and Beloit Corporation is not sure if they should allow me access. They're waiting for Mike Radcliffe to return their message.

8:30 Warzyn has not arrived at guard house.

8:35 Warzyn has arrived. Jim Moser and another field member. They went onsite.

D. Downs

② 6-29-92

8:35 D. Downs speaks w/ the Head Security Officer, Mike Caniek, on telephone in guardhouse. He said, he is not allowed to grant access until the site access agreement is signed by IEPA and is in his hand. He suggested I call Paul Takacs.

8:40 Call Paul Takacs. He just stepped away.

9:00 Call Paul Takacs. Secretary believes he's in <sup>in</sup> a meeting.

9:05 Call Gail MacMillan. She's unavailable.

10:20 Speak w/ Paul Takacs. I explained to him that the Security Office will not allow me site access until the site access agreement is signed. Warzyn arrived at 8:35 and went onsite to perform monitoring well inspections. He will have an answer as to what I am to do by 12:00. I will contact Gail MacMillan by then.

DDon

6-29-92

③

12:15 D. Downs arrived onsite → observe MW inspections.

<sup>DD</sup> MW # 15  
stick up 2.3'  
stainless steel  
integrity O.K.  
W.L. = 24.54'  
TOTAL = 32.8'

field team: Jim Moser > Warzyn  
Jeff Prior

bailer → water red; 2-3 mm <sup>black</sup> deposit  
contained water in plastic tank  
portable in back of truck.

performed logging of mw-15  
decontaminate equipment  
seal cap on well and lock

12:45 <sup>DD</sup> MW 1 - north <sup>DD</sup> R PVC  
stick up 2.6'  
protective casing lose  
WL = 22.52' TD = 39.0'

DDon

6-29-92

10 PMU-1

performed gamma log + down removed one bail of water cloudy white water, water contained in plastic holder.

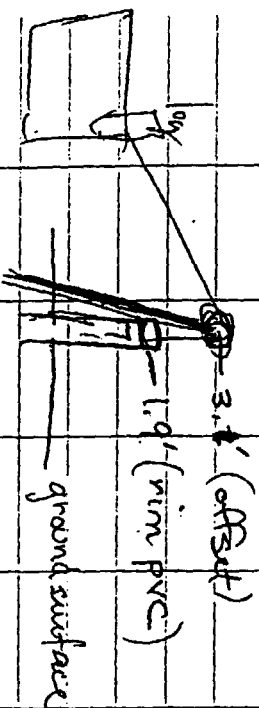
performed gamma log on well. higher kicks to right and higher denoted. These are your fines, clay etc. This well had clay layers at 3' and 25'.

13:15 PMU-7 - PVC (south of K&D building)

WL = 23.36'

TD = 36.55'

purged well - yellow/tan water; fines/sediments in basket. contain water.



gamma logged well. Seal at 2'.

(4)

6-29-92

Well was secured before leaving.

14:00 PMU-17 secured (lock rusty through)

stainless steel casing \* new lock will be added.

stick up = 12.5'

WL = 10.33'

TD = 17.9'

Well was purged and one bailer (3' bailer) of water was removed. Water contained.

Water was brown to tan with fine sands init.

Gamma logged well.

Discontaminated all equipment

All wells up to this point have been 2" wells.

14:30 located staff gauge sub-3 along Rock River.

14:40 PMU-16

stick up 2.9' (to nearest 0.5')

TD = 32.8' WL = DR-1

(5)

Don

⑥ 6-29-92

There was a brown fibrous  
decaying matter at bottom of  
mw-11a.

Perform gamma log on well  
Decontaminate equipment.

15:00 Take a 15 minute break.

15:25 Arrive at mw 9

WL = 26.95' TD = 36.95'

TD = 29.9'

well is secured

PVC construction

plant roots at bottom of well.

brown/tan water in well

fine were included when bail

of water was brought up.

Roots were also in bailer

No gamma log here.

Is the shallower well of well

cluster.

15:42

Take measurements at <sup>DD</sup>mw-10  
WL = 36.92' TD = 59.6'

<sup>DD</sup>Down

6-29-92

⑦  
electronic tape measure is  
used for water readings.

Well was purged w/ bailer for  
a minute or two (as usual) and  
one bail full was brought to  
surface. The water was brown/  
tan with fine and also  
a black precipitate. There  
were no roots in this well.  
Performed gamma log on  
this well. A few seams of  
fine material were identified.

Both wells <sup>DD</sup>mw-9 and mw-10 were  
secured prior to leaving area.

All equipment was decontaminated

All wells I witnessed were in fair  
shape (w/ exception of vegetative  
material at the bottoms of some  
of the wells.)

Wells done this morning:

W-6, W-4, W-12, W-2, W-14

W-13. (IEPA not present.)

<sup>DD</sup>Down

⑧ 6-29-92

W-2

vegetative debris

septic odor

W-14

foreign matter (iron precipitation) reddish brown water also

16:05

Warzyn team finished for today.

16:10

D. Downs off site

~~Downs~~

⑨

6-30-92

weather:

Sunny, 0-8 N wind (mph), temp range 64-83°F

7:15

D. Downs arrives at site. Check-in w/ guard.

\*

NOTE: The wells I designated as MW-# should be W-# as in the work plan. I have corrected yesterday's work.

8:00

Warzyn arrives at site. Same area.

8:15

D. Downs is made aware that she is not able or allowed a key to the trailer office. Also, this trailer is not secure. Therefore important documentation should not be left in this area. D. Downs has placed ppe and office supply in trailer.

8:20

Jim Moser has informed D. Downs that she is not allowed access w/o being

~~Downs~~

① 6-30-92

accompanied by a Waryyn or

9:15 Tried to locate G-107 (ISPA well)  
Can't find well along railroad in  
Blackhawk Subdivision.

9:30 Tried to locate G-102 along road  
near Wendys

No wells along Progressive Lane

9:45 Located G101 along Highway 2  
- no protective casing  
- no locking device  
- has a vent  
- PVC

G101

WL = 44.17' stick up 2.6'

TD = 46.5'

Water level indicator was deconed  
before and after use.

The well was purged for a couple

~~Down~~

6-30-92

②

minutes and one bail removed.  
The vegetative matter (brown)  
much like roots was found  
at bottom of well. A sample  
was taken of this material  
for the Waryyn biologist.

9:55 Photo #1  
Geoff Pryor placing bailor  
in well G101. (Facing east)

10:00 Perform gamma logging of well  
G101. Total depth of well is  
= 53' (actual; which means 6' of matter)

10:05 Photo #2  
Geoff Pryor gamma logging  
well G-101 (Facing east)

Well water was brown; a little less  
sediments than yesterday;

\* Remeasured depth 52.2'

~~Down~~

(12)

6-30-92

10:30 Two wells (G108 (STD), locked protective casing, no well keys) Saline St. near apartments were coated.

10:55 Wangyn went to lunch.

12:00 Wangyn (Jim Moser) has informed me that the afternoon will be spent locating<sup>ing</sup> monitoring well and soil boring locations.

12:20

In or near farming sand disposal area / Fibrous sludge area  
W-21, 21B (well nest)  
W-25, 25B (well nest)  
W-22, B, C (well nest)

DB-1

SB-11

DB-4

SB-9

SB-10

DB-8

D. P. am

6-30-92

(13)

13:00 SB-18 in the old pond area was located.

The locations were located with stakes w/ orange paint on end.

13:05

Photo #13 (taken at 12:50) Jim Moser staking location for soil boring (facing south)

13:20

Completed locating borings.

13:25

Discusses site w/ Paul Takacs. Visited Talcott Free Library in Rockton Illinois where Bob's file is maintained.

15:30

D. Downs leaves to return to Chicago / Lansing

18:30

D. Downs arrives in Lansing.

D. P. am

(14)

7-7-92

0800 Arrive at Beloit facility, check-in w/ guard at gate. Personnel include K. M. Gwink (Ebasco), P. Takacs (IEPA) & M. Nickey-Tebrugge (IEPA)  
0810 Arrive at Warzyn/IEPA trailer, meet w/ Tom Dushek (Warzyn). Looking at completed Warzyn phone logs for permission to sample residential wells. Plan is to split residential well samples w/ Warzyn on 14 locations (assuming permission is given).  
List of residue needs to sample:  
✓ 1004 Watts AM 7/7  
✓ 905 Watts PM 7/7  
✓ 1314 Watts PM 7/7  
✓ 918 Watts 7/7  
✓ 1416 Blackhawk P.M. 7/7  
✓ 1114 Blackhawk (no answer at Warzyn call) - may stop by today.  
0855 leave to begin sampling; second Warzyn person arrives.  
0915 Arrive 1110 Blackhawk;  
Kara & McGink;

(15)

7-7-92

Will all stay for this sample (not a split); then will go on to 1004 Watts (split).  
0920: No one home at 1110 Blackhawk; will go to 914 Watts and take split.  
1020 Collect split sample at 914 Watts.  
1050 Sampling complete & sample cooler sealed. Trying to sample 910 Watts (split); Warzyn will sample up the road, then will do (split) 1004 Watts.  
1130 Sample 910 Watts from outside fence.  
1140 Sampling complete at 910 Watts.  
1150 Move to 1004 Watts to collect split.  
1215: Sample collection at 1004 Watts.  
1230: Finish sampling @ 1004 Watts  
1240: Lunch break  
Kara & McGink

(16) 7-7-92.

1255 Arrive @ 1009 Watts, Warrzyn  
is sampling (no split); water  
is ok grey, almost black  
not much particulate matter;  
slight septic (?) odor, says  
Warrzyn sampler (Terry)

1320 Return to trailer to get  
more coolers.

1400 Leave trailers for 1106

Blackhawk - no one home,  
trying 1110 Blackhawk.

Rest of wells to split are:

✓ 905 Watts (1220 Blackhawk)

○ 918 Watts

✓ 1304 Watts

✓ 1314 Watts

✓ 409 Dingman → 403

✓ 1114 Blackhawk → 1110

✓ 916 Blackhawk

✓ 1416 Blackhawk

900 Prairie Hill - Trulls

903 Prairie Hill -

No one home 1110 Blackhawk

1420: No answer at 1416 Blackhawk;

Return to other Warrzyn

Kara A MZurk

7-7-92

(17)

van at 913 Watts; sample  
collected (not a split) by  
Warrzyn.

1430: Arrive @ 918 Blackhawk,  
Safe-T-way Facility for  
sampling, Tom Dushak (Warrzyn)  
is getting owner info, new  
owner

1435: Arrive 1012 Blackhawk.  
No one home. Several other  
houses w/ no answer then  
go to 1302 N. Blackhawk - will  
sample (no split)

1520: 1310 Blackhawk to sample  
(no split), also sampling  
1314 Blackhawk (no split)

1605 Call Ebaco Chicago &  
let Dorothy know Warrzyn  
plans on conducting soil  
gas sampling next week.  
Paul Takacs confirmed  
needing an Ebaco person  
out here next week.

1630: Arrive 1310 Watts  
w/ Terry. Terry has

Kara A MZurk

(18)

7-7-92

sampled 905 Watts which was one of our splits. Will talk w/ T. Jakac about getting another split location.

1450 Arrive 1208 Blackhawk.

Terry is sampling (no split). try 1820 Blackhawk no

replacement for 905 Watts

91404 Watts no replacement for 1408 (accas denied).

checked w/ Terry - he hasn't

done these yet.

1720 Arrive 1816 Blackhawk for sampling (no split).

1740: Arrive 1314 Watts +

start sampling.

1810 Back @ trailers, packing fast coolers for shipment.

Terry is taking Wazyn's coolers to FedEx - will also

take our coolers. Tom (Wazyn)

thinks he'll do 918 Watts for

split - mid MS/MSD

1850 Arrive @ 1820 Blackhawk.

Kara & MZ Guzik

7-7-92

(19)

1915 Collect sample @ 1220 Blackhawk.

1930: Tom is collecting a nonsplit sample at house next door -

(Kile?)

1945 Find Terry @ 917 Watts collecting nonsplit sample.

2005 Go to 918 Watts to see about sampling (split). No.

Parents home, will go back tomorrow + sample.

2010 Leave job site for day

Kara & MZ Guzik

Kara & MZ Guzik

(20)

7-8-92

0730

Arrive at Belait site  
 Bagging ice for coolers.  
 Split locations to be  
 samples:

changed 409

Dingman

918 Watts

✓ 1304 Watts

✓ 916 Blackhawk

✓ 1114 Blackhawk

✓ 1416 Blackhawk

One cooler is short 1 BNA  
 bottle: will do split w/ these  
 coolers @ 1114 Blackhawk.

0810 leave trailers to begin

sampling. Kara, Paul are w/

Tom. Michelle is w/ Terry.

0825 checking w/ other team as

to order of sampling, then meet

Tom @ 409 Dingman (split).

0830 Arrive 409 Dingman,

person @ house is watching

house for owner's car owner

doesn't want well sampled

because it was clean last time

Kara &amp; Michelle

7-8-92

(21)

\* if something is found properly  
 value may go down. Paul is  
 talking to woman in next house  
 (403 Dingman). Will collect  
 split here.

0855 Setting up to split sample

@ 403 Dingman.

0910: Wrote on sample bottles

for (90 km) 403 Dingman

sample time of 0820, should

have read 0920 instead.

0940 Finished sampling &amp; moved

to 47 km 1020 Watts to watch

Terry sample!

0950 Arrive @ 1114 Watts to

sample (split) - no one

home.

1000 Arrive 1304 to collect

split sample @.

1020 Collect split sample @

1304 Watts.

1030 Switch off fuel coolers

for empty ones w/ 1304

Van.

1045 Arrive 918 Watts.

(22)

7-8-92

daughter @ home - Dave  
Parents haven't signed  
release - doesn't think they'd  
be back til after 9pm. Going  
to 1416 Blackhawk

1050 AT 1416 Blackhawk -  
Preparing to collect split  
sample

1100: Collect split sample @  
1416 Blackhawk

1130 Arrive 1114 Blackhawk -  
Terry just finished his  
sampling, owner just  
left - will collect split  
sample.

1150 Collect split @ 1114 Blackhawk  
Collected sample from 1110  
Blackhawk (split).

1200 Back to trailer at Beloit  
Corp to deal sample colors  
- give to Paul for delivery.  
Just 9 splits collected today.

403 Dingman

1304 Watts

1416 Blackhawk

Kara McQuirk

(23)

7-8-92

1110 Blackhawk  
1250 Leave trailer for lunch  
1345 Return to Beloit vicinity,  
waiting for Warrzyn. Paul  
is taking our split samples  
to EPA Regional Office in  
Rockford for <sup>455</sup> JRS shipment.

1400 Meet up w/ Warrzyn - go w/  
Tom to 1012 Watts for his  
sampling (no split)

1445 Arrive 916 Blackhawk -  
no-one home. Go to Wendy's  
to call Chicago office, &  
Gail Mac Millan in Cincinnati.

1610 Arrive 1412 Blackhawk

Terry sampling, no split.  
1640 Arrive Blackhawk,  
talk w/ Paul about

next week's schedule.  
1715 Arrive 916 Blackhawk  
to collect split.

1740 Collect split sample  
@ 916 Blackhawk.

1750 Packing sample for  
shipment.

(24) 7-8-92

1815 Paul & Michelle go w/  
Terry to Fed Ex - 1 stay  
w/ Tom

1820 Arrive @ 1215 Watts for  
sampling. no split; gave  
woman copy of 1988 IEPA report.

1855 Arrive 1102 Watts

1930 Finish residential well  
sampling for day. Will  
return to hotel & wait  
for word about access  
to 918 Watts (last split).

2130 Receive word that  
access was still not  
obtained; Paul Takacs  
says this residence may  
be done next week, if  
access is obtained. I'm  
no longer needed - going  
home.

IEPA/DLP/C  
SEP 22 1992

RECEIVED

~~Kara M. Gunk~~  
Kara M. Gunk

(25) 7-14-92

15:00 D. Downs leaves Chicago  
Office to travel to  
Beloit Site

17:30 D. Downs arrives at  
hotel

19:15 D. Downs arrives at site  
for residential sampling

19:30 P. Takacs arrives

20:00 Sample 900 Prairie/Tulls  
An MS/MSD was taken  
here. 15 voas; 6-semi  
6-PCB.

22:00 Sample 903 Prairie/Lucas  
was sampled.

23:00 D. Downs and IEPA  
crew are done for day.

D. Downs

(26) 7-15-92

6:30 D. Downs arrives at site.  
Read Work Plan for  
today's activities.

7:30 Observe soil gas near  
loading dock by TEPA  
trailer.

- Cement bit is being  
used to drive through  
the asphalt/pavement  
outside of loading dock.

crew: Tom Dushack

Jim Wink

location: SG 19

readings (PID) 8-1.5 ppm.

8:15 Observe shallow boring  
with T47 mobile drill.

SB-15 1<sup>st</sup> spoon

3/4 recovery; fill material.

H<sub>2</sub>O = 0

filled sample bottles

8:35 At  $\approx 10'$

Decon spoon w/ soap & water.

8:40 Sample 7-8.5'. The split spoon  
has hit refusal nearly every  
time. Refusal is 50 blows

Down

7-15-92

Sample 7-8.5'

Brown sand, large grained,  
to gravel sized material.  
no H<sub>2</sub>O hits.

8:50 8.5' spoon

blows: 28 40 50/3"

SG 32 observed at 9:07

hits 23.9 ppm - 22.5 ppm

calibrated 55 ppm Isobutylene.

reading after 55.1 ppm

9:30 17-19' Sample (2' spoon)

3 inch diameter

Sample less gravelly  
more sand (med to coarse)  
no H<sub>2</sub>O reading (hit)

\* SG-32 (soil gas) which had  
hit at 24 ppm was next  
to SB-15.

9:50 Spoon 23-25'. Sand to coarse  
sand w/ little gravel, poorly  
sorted. no H<sub>2</sub>O ( $\phi$ ).

The hole will be filled in pour

Down

(27)

(28)

7-15-92

to leaving area. If soil taken out is 7.5 ppm on then it will not be used to backfill. Otherwise the soil will be put back in hole with some chips.

10:00 Split spoon #12. A layer of sandy silt about a 1' long was encountered. This is ~~20-25'~~ interval. 23-25'

10:10 Split spoon #13. A less permeable layer encountered. Also layer of sandy silt. Now more sand now than silt. There is also gravel and coarse sand within spoon. 25-27'

10:30 Split spoon #14. The sample is more homogeneous. There is a 2" layer of gravel. Mostly fine sand, staining brown-red. No thru reading (p) 27-29

7-15-92

(29)

10:45 Sample #15 wet 29-31' WL = ~~29.50~~ 28.5' fine sand; at bottom the rest of sample same as previous interval.

11:00 Pulling auger out of hole. Hole was filled with soil taken out of hole and with bentonite crumbles.

12:00 Locating new hole

12:15 D. Downs goes to lunch w/ Paul Luck and Michelle from IEPA. Sue also went with.

13:15 D. Downs discusses drilling at SB-10. Talks w/ Jerry (Geologist w/ agency) there at 7. They have red thru readings between 5-7 ppm.

Don

(3) 7-15-92

For SB-15 split spoon #11 was the highest at 1.9 ppm during head space analysis. This sample analyzed w/ top of fill or the less permeable layer.

13:25 Split spoon #4 SB-10 Hnu = 5 ppm and last sampling for on soil

1) voc

2) Semi-voc

3) PCB

4) metals / CN

13:35 Split spoon #5 SB-10

Coarse sand with gravel. Brown sand. Hnu = 1-2 ppm

13:45 Reading at borehole  $\phi$

Split spoon #6 at SB-10

Hnu =  $\phi$

Very poor recovery. Gravel material w/ some sand.

13:50 Dig down

~~DD~~

7-15-92

14:10 Changing from automatic hammer to hand operated hammer.

14:40 Retrieve split spoon #7

Only went down a foot (because of refusal) and pulled sample. A large piece of gravel was blocking spoon. Hnu =  $\phi$ . Coarse sand and gravel.

frame #4 Drilling at SB-10 in sludge spreading area

Driving spoon

14:50 Split spoon #8 SB-16 poor recovery; Hnu =  $\phi$

15:00 Split spoon #9 SB-19 poor recovery; Gravel layer w/ coarse sand. Hnu =  $\phi$

15:10 Split spoon #10 SB-21 poor recovery; Gravel layer w/ coarse sand. Hnu =  $\phi$

~~DD~~

(31)

(32)

7-15-92

15:20 Hit Silty sand at 22'

thru = 2 ppm

Split spoon #11 21-23'

Nonmetals were taken or  
 semi-vol/PCB after  
 10-12' because of poor  
 recovery.

15:30

Split spoon #12 23-25'

Silty sand with a little  
 gravel. Good recovery  
 some red staining  
 Filled all sample tubes  
 thru =  $\phi$

15:40

Split spoon #13 25-27'

Fair recovery; silty sand  
 thru = 0.5 ppm

16:00

Split spoon #14 27-29'

Good/fair recovery  
 thru = 1 ppm  
 Clean brown fine sand w/  
 some silt and gravel

✓  
 ID

7-15-92

(33)

16:10 Split spoon #15 29-31'

thru = 8 ppm

Silty sand br w/gravel  
 no noticeable odor

16:30

Split spoon #16 31-33'

thru = 3 ppm

Silty sand/brown w/gravel

16:40

Split spoon #17 33-35'

thru = 2 ppm

med to coarse sand, w/CI  
 homogeneous

No water level reading. The  
 dialer's pulled up auger  
 before reading was taken.

17:00

Pull auger + fill in hole w/  
 soil and cumbles (benzofluo)

17:15

Head space test.  
 Thermo Environmental Inc  
 PID

✓  
 ID

(34)

7-15-92

Head space readings

SB-10

split spoon #1 160 ppm  
#2 284 ppm

sample

1-3  
3-5  
5-7  
7-9  
9-11  
11-13  
13-15  
15-17  
17-19  
19-21  
21-23  
23-25  
25-27

4 139 ppm  
5 215 ppm  
6 270 ppm  
7 154 ppm  
9 385 ppm  
10 385 ppm  
11 385 ppm  
12 142 ppm  
13 290 ppm  
14 301 ppm (WATER TABLE?)  
15 386 ppm (less permeable layer)  
16 317 ppm  
17 354 ppm

18:00 D. Downs and S. Havens onsite.

33-35

Down

(35)

7-16-92

7:00 D. Downs onsite

7:15 Observe drill Shelby rig at

Split spoon 42'-44' (1 1/2 ft)

sand & gravel, brown

8:30 Observe auger drilling (mobile drill #47) at

SB-16

Split spoon #5 (110-12')

sand, gravel, gravel, and gravel

8:50 Split spoon #6

no recovery (one large gravel)

9:00 Take a break. Terry making a phone call.

Back to drilling

9:15 Split spoon #7 no recovery.

9:25

Drilling 4 1/4" auger (HSA) radio hammer (manual drop)

10:00

Split spoon #8 (15-17') sand (orange) w/ large gravel. Fair recovery. Full suite of samples taken.

Down

(36)

7-15-92

Sampled for VOA, some PCB, metals, cyanide + head space.  $\text{H}_2\text{O} = \emptyset$

Split spn #9 (17-19')  
Thrup. less large gravel  
more coarse sand.  
Good recovery

Split spn #10 (19-21')  
moist, orange sand + med sand  
oxide staining on some  
grains. There are some  
fines in this unit too.  
Very homogeneous.  $\text{H}_2\text{O} = 0.5$

Split spn #11 (21-23')  
moist, homogeneous medium  
sand unit!  $\text{H}_2\text{O} = 0.5 \text{ ppm}$   
no odor! 100% recovery

Split spn #12 (23-25')  
moist to wet! sand med to coarse  
homogeneous!  $\text{H}_2\text{O} = 0.2 \text{ ppm}$   
100% recovery.  $\text{H}_2\text{O} = \text{dry}$

7-15-92

(37)

10:40 TD = 25'  
Pulling auger out of well  
Filled in borehole with soil  
and bentonite (cumbles)

11:00 Called Gail MacMillan  
Updated her on activities  
3 borings, 1 geotechnical, and  
soil gas. She asked about  
GC samples.

11:10 Mark (GC operator) said  
he is not scoped to check  
borings soils only soil gas.  
At location aa, ~~SBZ~~  
PCZ = 56.4 ppb  
~~soil gas~~  
1/2 DCE = 10.3 ppb  
1/1 DCA = 5.4 ppb  

SB-22  
mean

11:30 Go to lunch

12:30 Refused access (Waryun  
on lunch)

13:00 Arrive at SB-11 (SS3)  
5-7' spoon being retrieved  
Coarse sand + gravel

(38)

7-15-92

13:10 Split spoon #4; gravel  
and coarse sand; Hnu= $\phi$   
1 ppm; 7-9'

\* Took 6' sample and 30'  
sample from yesterday  
afternoon's boring (SB-10)

\* This boring SB-11 is <sup>in</sup> the  
fibrous sludge area, south  
of boundary sand near  
river.

13:20 Split spoon #5 (9-11')  
coarse sand & gravel  
Hnu = minimal

13:30 Split spoon #6 (11-13')  
coarse sand and gravel  
Hnu =  $\phi$

13:40 Split spoon #7 (13-15')  
coarse sand and gravel  
Hnu =  $\phi$

*J. Dan*

7-16-92

(39)

13:45 Split spoon #8 15-17'  
Hnu =  $\phi$ ; more coarse sand  
then gravel.

13:55 Split spoon #9 17-19'  
Hnu = 1-2 ppm; coarse sand  
w/ some gravel; brownish  
to gray gravel

14:05 Split spoon #10 19-21'  
Hnu = 2-3 ppm; coarse  
sand w/ some gravel.  
\* Hnu at 0-20 scale

14:15 Split spoon #11 21-23'  
Hnu =  $\phi$ ; coarse sand  
getting finer;

14:30 Split spoon #12 23-25'  
Hnu =  $\phi$  last 1' wet  
med to coarse sand; homogeneous;  
above sand; coarse sand & gravel

14:45 Split spoon #13 25-27'  
Hnu =  $\phi$ ; medium sand brown

*J. Dan*

(40)

7-16-92

Wh - Dry at SB-11.

14:50 Pulling out augers.  
Fill hole w/ sand +  
bentonite (crumbles)

15:00 Decom drilling

15:30 Setting up at SB-12.  
Rig got stuck; pulling up  
to location SB-13.

16:30 Had trouble w/ truck getting  
stuck. Boring SB-13;  
First split spoon. This is  
in the Foundry Sand area.  
Top soil 6" and then  
foundry sand. Normally  
top soil has been first  
2'. Sample 1-3'  
Dark brown

16:35 Split spoon # 2 (3-5')  
grayish brown sand (med to fine)  
w/ some tan sand locally (med to fine)  
Htw #0

D. Downs

7-16-92

(41)

Split spoon # 4  
black, <sup>so.</sup> ~~sand~~ foundry sand  
Htw = 0; med to fine grained

End of boring for today.

17:00 D. Downs off site  
Will continue at  
SB-13 tomorrow

D. Downs

(42)

7-17-92

7:00 D Downs on site at location SB-13

7:30 Split spoon #9 (17-19')

The Hnu is acting up. Humidity might have a factor this morning. Very little recovery in this spoon. Tan sand medium grained; homogenous.

7:40 Talk w/ Terry (Geologist on T47 rig). There was no hits on the head space samples taken yesterday from SB-11 or SB-16. Wargyn is talking about moving one of the bungs closer to the bung (SB-16) that detected the high readings. Should they encounter this again they will continue moving bungs to the south to find extent.

D Downs

(43)

7-17-92

7:45 Split spoon #10 (19-21')  
Mixture of gray / brown sands. with some gravel. Fill/like material.

8:00 Split spoon #11 (21-23')

8:05 Split spoon #12 (23-25')  
Poor recovery; Large Gravel. Hardly enough for voids.

8:30 Split spoon #15 (29-31')  
No Hnu hits. Gravel w/ coarse sand.

4.00  
Photo 7 Drill rig at SB-13  
Decomring and hammering spoon are activities.

8:40 Split spoon #16 (31-33')  
MOIST; Silt layer (sandy silt)  
Brown to tan. Hnu = 0.5 ppm

D Downs

(44) 7-17-92

Samples taken yesterday to lab

SB-16: 22' sample

SB-11: 10' + 20' sample

8:45 Photo <sup>30</sup> 85 Split spoon # 17.  
33-35'; Wet; Sandy silt  
layer; homogeneous; H<sub>2</sub>O = 92  
ppm

End of boring 35'  
WL 33.5'

Split spoon # 17 has a  
duplicate sample to it.

9:15 Pulling augers; down rig  
and augers.

9:40 Talk w/ Gail MacMillan and  
update her on site.

10:00 Talk w/ Paul Takacs. We  
will sample at SB-9. This  
location is just west  
of W-4 in sludge fibrous area.

Down

7-17-92 (45)

10:20 Set up at SB-9. Driller  
went to make a phone  
call. Waiting to start.

10:45 Begin auguring;  
Split spoon # 1 (1-3')  
No fibrous material;  
brown coarse sand w/ fine  
gravel. H<sub>2</sub>O = φ

10:50 Split spoon # 2 (3-5')  
50% recovery; tan to brown sand  
coarse grained with gravel  
H<sub>2</sub>O = φ

10:55 Split spoon # 3 (5-7')  
Mixed coarse sand and gravel  
H<sub>2</sub>O = φ

11:00 Split spoon # 4 (7-9')  
No recovery; Well rounded  
large gravel

11:10 Split spoon # 5 (9-11')  
Silty shale gravel in at wash,  
large gravel to fine gravel, and

Down

7 KM  
4-7-92

coarse sand. Hnu =  $\phi$

Split spoon #6 (11-13)  
Brown sand and gravel  
Hnu =  $\phi$

Split spoon #7 (13-15)  
Hnu =  $\phi$ ; Tan and brown  
coarse sand and gravel

Split spoon #8 (15-17)  
Brown coarse sand and gravel  
Hnu =  $\phi$

Split spoon #9 (17-19)  
Brown sand medium to  
coarse w/ some gravel  
Hnu =  $\phi$

Split spoon #11 (21-23)  
Look sample! No Hnu  
ht. brown sand coarse  
w/ some gravel

7 KM

SK-17-92

Split spoon #13 (23-25)  
Moist; 1' of silty  
sand; gravel above  
this sand

Hammer weight 360

Split spoon #14 (25-27)  
Medium to fine tan sand  
Hnu =  $\phi$

End of boring 31'

SB-13 Sample from  
#2 split spoon  
3-5.

4:00 Have checked several times  
for soil gas analysis, but  
have been avoided

15:00 SB-9 Headspace analysis  
0.3 ppm  
0.0 ppm  
0.0 ppm  
0.0 ppm  
0.0 ppm  
0.0 ppm  
0.0 ppm  
0.0 ppm

(47)

7-20-92

(49)

0730 Arrive @ Beloit Corp site & go to trailer. Meet w/ Sue.

Haven't (Ehlers Denver) & get update on site activities.

Says Warren doesn't seem extremely helpful - not really letting us know their plans.

Sue will go w/ geotechnical crew today & will go observe soil gas crew at Solitron.

I will watch shallow soil boring crew & collect samples as necessary.

0755 Sue leaves to go w/ geotech crew. Terry from Wisconsin appears to be the geologist for the shallow soil boring. Will talk to him when he's free. Rig crew is determining if getting ready for day.

Call Wendy @ Blackhawk Subdivision following Terry - he wants to talk to Warren person. I want to see what

Karen Plisnick

(48) 7-17-92

RM7 SB-9 headspace cont

9) 0.2 ppm

10) 0.6 ppm

11) 0.6 ppm MY sample (ISER)

12) -

13) 0.0 ppm

14) 0.0 ppm

15) 0.0 ppm

They are using the 6' sample -

15:00 Sending samples to Ted.

ex. We have packed them up and are dropping them off there.

15:30

Down after there checked in w/ Gail MacMillan and updated her on week events

Adam

(50)

7-20-92

geared. Rig is located. Terry says today they'll be putting in water table wells in back of Beloit storage area.

0830 Drive to well location

W-22. Drilled are setting up @ the location W-22.

Location will have shallow, intermediate, & deep wells - today is shallows well.

0850 Weather - partly cloudy, light wind ~5 mph, temp ~68°

Crew: Warren, Terry

Layne: Scott, Mark, & EPA/Chase: Kara, M. Gault

0858 Begin pounding split spoon

(1st) 1-3'

SSpoon #1 moderate recovery, some qn, dk brn sand w/ silt & cohesiveness.

0905 Split Spoon #2 3-5', recovery ~6"; It tapers off w/ sand bottom 3" dk brn sand w/ silt

HNu = 0.2 ppb. Augering thru med brn sand w/ coarse river gravel (wee

Kara M. Gault

7-20-92

(51)

rounded gravel pebbles. 0911 Split Spoon #3 (part recovery, dry med brn sand w/ coarse gravel. (5-7'), HNu = 0

0920 Driving SP #4, (7-9') dry med brn - 11 brn sand w/ coarse gravel. HNu = 0

HNu is now registering 4 ppb background, as opposed to <1 when started. Humidity may account for this. Terry needs sample values as above. The

0930 (Current background level) Driving Spoon #5 (Selecting to sprinkle. (Photo #1))

SF#5 HNu = 1.5, poor recovery sand & gravel - w/ 2" of dk brn sand w/ silt & lrp.

0940 Driving SP #6 (11-13') HNu = 1.5, TSG = 13.4 MP 9.4 ppb, pH 4.1 #2 of SF#6, coarse gravel & qn w/ silt, dry, med brn 11 brn

0945 Driving SP #7 (13-15') HNu = 3 ppb; dry 11 brn - 11 grey sand & gravel, coarse.

Kara M. Gault

(52)

7-20-92

0955 Driving SP #18 (~18')  
 HNu background (in van) keeps  
 increasing. Now is 13.5 ppb.  
 Terry says HNu was not  
 calibrated this morning - one of  
 the Wazyeen people forgot the  
 cal. gas @ home.  
 SP #8 HNu = 5 ppb. 11 brn-11 gry  
 sand & gravel, scraps of red  
 plastic in spoon. Terry is  
 lining sample bottles w/ Al foil  
 for headspace analysis.  
 Top 2" of ~8-10" is dk brn  
 silty sand, moist.  
 1000 SP #9 (22-24) HNu = 3 ppb, dry,  
 med brn sand w/ silt.  
 1010: Wazyeen Jeff  
 arrives w/ new calibrated HNu.  
 Spoon #10 (24-26) dry  
 compacted med-11 brn sand w/  
 some clay, trace gravel.  
 HNu = 0 ppb.  
 1020 Driving Spoon #11 (26-28).  
 HNu = 0 ppb. dry 11-med brn  
 sand w/ silt.

Kara McGurik

7-20-92

(53)

1030 Spoon #12, very pebbly  
 recovery, 2" of coarse sand & gravel,  
 drove a stone (28-30'). One  
 of the kayakers in the west k  
 got more caught in the piping  
 for the mo. w/ the group.  
 1040: Kayaker 11 will return. The  
 auger is attached to the ones  
 in the hole. Augering continues.  
 045-10' including 11-13 (30-32')  
 HNu = 0; 8-10" recovery, wet,  
 coarse 11 brn sand w/ some  
 pebbles.  
 1100 Spoon #14 HNu = 0; 10' recovery,  
 damp, coarse 11 brn sand w/  
 some pebbles. At 35', no real  
 water. Will go deeper to  
 find it.  
 1115 Sp in #15 HNu = 0 10"  
 recovery, coarse 11 brn sand w/  
 pebbles, dry.  
 1130 Spoon #16 HNu = 0; 18"  
 recovery, coarse 11 brn dry sand  
 pebbles of brick (see KRC) red.  
 material (technical) End = 41'.  
 Kara McGurik

(5)

7-20-92

1140 Break for lunch + let hole sit

1220 Return to W-22 location.

Water in hole @ 36.5'

Setting well - pouring 8'z sand for sandpack. To ~ 3.5'

1245 Photo #3 Setting sandpack w/ stainless steel screen (10') + PVC risers attached already in borehole.

1305 Adding bentonite powder to hole after pouring 1 bag of fines into hole (gt fines)

1325 Photo #4: augers pulled out of hole, riser pipe in open hole.

1330 Putting 6" (?) steel protective casing over riser. Forcing it down w/ rig auger head.

Added some water to bentonite powder, but not much. Drillers are evening out gravel + sand around protective casing.

Didn't appear to hydrate the bentonite very much +

then covered w/ bentonite.

Kara M. Gunk

7-20-92

5.5

1345 Photo #5: Terry taking water level measurement. (5')  
Water level =

Terry says about not adding a lot of water to bentonite powder: "only way to really do it, otherwise bentonite would stick to augers. Karen gets upset about 'over time'." This is a very different way to grow a borehole for a mu - I'll check the GAPP + WP to ensure compliance.

1350 Rig moves to ~~W-21~~ <sup>decon</sup> K11c location; will go to W-21 location after decon. Go to truck + find the Ebasco ecological team waiting to set up decon barriers.

1420 Head out to new location - W-1. Photo #6, 7, 8 are camera rolls of new down founding from W-21 location.

1445 Setting 1" auger on hole.

Kara M. Gunk

(56) 7-20-92.

1450: Spoon #1 18" HNu = 0  
 14" dk brn organic silty sand w/ silt + clay over 14" of 14" brn-lt grey coarse sand (of gravel (cedars)).  
 1455: Spoon #2: ~16" HNu = 0  
 top 5" dk brn-blk clayey silt  
 soil over 8" 14 brn/gry coarse gravel - fine c.  
 1500: Penetried, returned to trailers for replacement. Spoon #3 collected while, lower gone.  
 1510 Spoon #4 driven. appears heavy dirt or rock ~1/2 way down.  
 Rock recovery. 14 brn-tol grey coarse sand + gravel. HNu = 0 after being smashed into sample for.  
 1515 Driving spoon #5; HNu = 0; ~10" recovery, coarse sand + gravel.  
 1520 Spoon #6; HNu = 0-0.2; ~12" recovery same v. coarse sand + gravel.  
 1530 Spoon #7; HNu = 0. 10" recovery most coarse sand + Kaya McGinnis

7-20-92

(57)

1535 Driving spoon #8. HNu = 0. same coarse sand + gravel; dry, 14 brn-lt grey.  
 1545 Spoon #9; HNu = 0; damp clean, fine sand. 10" recov.  
 1550 Spoon #10; HNu = 0; damp clean fine sand ~16" recovery  
 1600 Spoon #11; wet sand, saturated. HNu = 0. 7" recovery. Sand is med-coarse grained, few pebbles (small).  
 Water level @ 23.5'; total depth 25'; will auger to 30' to set well.  
 1620 Photo #9 Drillers inserting rods into borehole for augering to 30'.  
 1630 Layne Driller Scott went back to trailers to get another screen w/ fitting - this one (free) had defective threads. KMJ had different schedule size threads.  
 1640 Continued nears brown Kaya McGinnis

(58)

7-20-92

in well - drillers are pouring  
in sand back  
1655 Adding bentonite powder  
to hole. Photo #10 drillers  
pouring bentonite powder.  
1658 Adding water to a hose.  
Photo #11 is drillers  
hydrating bentonite  
1705 Photo #12 inserting  
steel protective casing  
into bentonite.  
1715 Photo #13 finished well  
W-21  
1730 leave site for day; go back  
to hotel & write up daily  
summary and photolog.

~~Kara~~

~~Hg~~

~~Grick~~

Kara Hg Grick

7-21-92

(59)

0715 Arrive at site for day.  
Saw drillers taking rig  
back to area behind storage  
area as I pulled up.  
0730 Arrive @ new location  
Mu-20. Some crew was  
yesterday. Weather is slightly  
cloudy (blowing off), light  
wind, Temp ~ 65°F.  
0745 Spoon #1: HNu = 0;  
rec = ~18"; dk bn sand;  
organic matter rich soil,  
sand w/ clay & silt, trace  
pebbles at bottom of spoon.  
0753 Spoon #2, HNu = 0;  
rec = 10"; dk bn - med bn  
silty sand w/ trace pebbles.  
0800 Driving Spoon #3, HNu = 0;  
rec = 12"; med - dk bn silty  
sand @ top, grading into  
poorly sorted sand @ bottom.  
0805 Spoon #4, ~10" dry med  
bn. 11 grey coarse-med sand  
w/ pebbles, some mud  
staining. HNu = 0  
Kara Hg Grick

(60)

7-21-92

0810 Spoon #5; HNu = 0  
 Rec = .8"; coarse sand & gravel  
 0820 Spoon #6 collected.  
 0830 Spoon #7; HNu = 0  
 rec = .8"; dry coarse sand  
 & gravel  
 0835 Spoon #8; HNu = 0; rec = 6"  
 coarse sand & gravel  
 0850 Spoon #9; HNu = 0;  
 rec = 10" well sorted, med-fine  
 sand, damp.  
 0855 Spoon #10; saturated med  
 brn well sorted sand; HNu = 0.  
 Rec = 10" letting hole sit  
 so water level can be measured.  
 0905 Augering down another  
 5' on both sides well. Deque  
 another split spoon. Rec = 8"  
 saturated fine-med sand.  
 At 26', turning deep they'll  
 get another 2 or so.  
 0915 Spoon #12; Rec = 8"; HNu = 0.  
 HP is saturated sand, loose  
 wet @ bottom.  
 0930 Photo #14: Drills using  
 Kane 1st bank

7-21-92

(61)

rose to blow out water from  
 borehole

0940 Drills pouring sand for  
 sandpack.

0950 Marzyn's measuring tape got  
 stuck in sandpack. Drills  
 were pouring sand while Marzyn  
 had tape down hole - tape end  
 got buried. Tried (K.M.) to  
 pull auger up & see if that  
 would free tape - didn't work.  
 Used Vernier pipe w/ water  
 from drill rig to loosen sand  
 & pull out - didn't work.

Drills went & got 350 gal of  
 water & used most of it to  
 try & get tape out - didn't  
 work. Finally tried using  
 augers to loosen sand - tape  
 broke. Whipped end is  
 ~17' below ground surface.  
 Drills pulled rig & down,  
 will abandon hole & re-drill  
 (without sampling) nearby.  
 1045 left site w/ Sue to make a

Kane 1st bank

7-21-92

phone call to Chicago office.  
1110 Arrive at geotech boring location  
GB-1 + watch Waryyn do the  
natural gamma logging  
1115 Go to Salterton + talked  
w/ Tom Durbank about soil  
gas survey @ this facility. Tom  
said that they had to clear  
the utilities + would probably  
start the survey late this pm  
or tomorrow.

1125 Back @ geotech w/ Sue Havers.  
1150 Leave for trip to hardware  
store + lunch

1245 Arrive back @ site so Sue  
can get her car. Walked out  
to MW-20 location. New location  
is ~15 NNE of original location.  
Old borehole was backfilled w/  
chips (bentonite) + covered w/ gravel.  
1305 Drillers placing screen + wires  
in hole. Pouring sand pack  
material.

1340 Drillers pouring +  
hydrating bentonite powder.

Kara 1/2 Gunk

7-21-92

63

1350 Drillers putting protective  
steel casing over riser.  
1355 MW-20 installation  
complete. Terry says  
they'll probably do soil  
boring on boundary sand  
pile.

1420 Arrive @ soil boring  
location SB-12. Drillers are  
setting up to split spoon, using  
3" spoons.

1425 Spoon #1: HNu = 0, Rec = 19"  
Sand dk brn-blk soil (clay + silt).  
1430 Spoon #2: HNu = 0.2, Rec = 22"  
dk brn-blk silty sand w/ clay.

1438 Spoon #3: HNu = 0.1, Rec = 22"  
med-dk brn sand w/ silt + clay.

1443 Spoon #4: HNu = 0.2, Rec = 24"  
10' from top, blue stained fibrous  
matter (pepe, stick?). nothing on HNu.

Top 20" dk brn-bk sand w/ silt  
+ clay, bottom: med. fine sand  
some pebbles in top 20".

1448 Spoon #5: HNu = 0.1, Rec = 22"

Kara 1/2 Gunk

(64)

7-21-92

med grey sand w/ silt + clay.

1500 Spoon #6: HNu = 0.6 Rec = 24"

med grey to blk sand w/ lenses

of orange sand (6" from top), grey

sand (just below orange), + orange

(4" from bottom)

1508 Spoon #7: HNu = 0.2 Rec = 24"

blk sand (med-fine) w/ lenses

of orange + red-brn about 4-6"

from top of spoon.

Note: split spoon sit unwashed

for several minutes prior

to HNu screening.

1515 Spoon #8: HNu = 0 Rec = 20"

top 6" blk fine-med sand, bottom

damp, dk-med brn, med-fine sand.

1520 Spoon #9: HNu = 0.4 Rec = 18"

top 2" damp blk med sand, bottom

dry coarse sand + gravel.

Photo #15: Driving spoon @

SB-12.

1535 Spoon #10: HNu = 0 Rec = 16"

coarse dry sand + gravel

med - Lt brn

1545 Spoon #11: HNu = 0.2 Rec = 18"

Kara M. Gunk

7-21-92

(65)

damp @ bottom, next dry, Lt brn -

Lt grey coarse sand + gravel.

1550 Spoon #12: HNu = 0.2 Rec = 16"

Lt brn Lt grey coarse sand +

gravel.

1600 Spoon #13: HNu = 0.2 Rec = 14"

Lt brn Lt grey coarse sand +

gravel.

1610 Spoon #14: HNu = 0.2 Rec = 16"

Lt brn - Lt grey coarse sand + gravel.

1615 Spoon #15: HNu = 0.1 Rec = 16"

Lt brn - Lt grey coarse sand + gravel.

1623 Spoon #16: HNu = 0.1 Rec = 8"

top 2" coarse sand + gravel.

rest is med brn damp med sand.

1630 Spoon #17: HNu = 0 Rec = 20"

damp med sand, med brn

At top of water table - w/ 11

pull augers, add bentonite

poultice (5 bags) hydraulic (De-

poultice, 9 minutes drill w/

Dorville - the hole w/ 11.

material emerged out. This

is what they did

1645 Returned to trailer + 11

Kara M. Gunk

(66) 7-21-92

Headed out to see if I can find either the soil gas or geophysics groups.

1700 Arrive @ 1314 Watts - Rock + Soil

Excavating Co. The soil gas crew is just leaving. The geophysics crew is also here. They've set up their grid for the em survey.

1730 Leave for day

Kara McQuirk

Kara McQuirk

7-22-92

(67)

0720 Arrive @ trailer. Meet w/ Eric who says Paul (Hartman) To Kree has gone w/ 2 Wisconsin people to sample a septic tank at the Trulls.

0730 Go to Satterton, where geophysics crew is setting up for surveying. Will join soil boring crew soon.

0815: Change of plans - Sue will be observing the soil boring crew + I will divide my time between the soil gas + the geophysics crews.

0830 Return to trailer to try + contact Gail MacMillan - she's out of reach. Will try back this afternoon.

0845 Return to Satterton site. Soil gas crew has not yet arrived @ 1314 Watts. They must still be sampling @ Trulls.

0910 Filling out daily reports, at Satterton location.

01015 Return to Beloit Corp trailer. Things have slowed down.

Kara McQuirk

(68)

7-22-92

Sue ramp dual-tube rig to shut down for parts run soil boring rig is being repaired, soil gas team has not returned yet.

1030 Sue leaves for shallow soil boring location at gravel pit. Soil gas team returns. Paul Tokars + Eric (IEPA) return to trailer. Talk w/ Paul about some concerns I've had w/ hydrating bentonite powder, spitting soil samples, etc. Raining now - moderately.

1110 Heading back to Soltation, Eric + Paul to follow shortly. 1115 Arrive Soltation, Paul + Eric arrive w/ in 5 minutes. Introduce IEPA to the geophysics crew + tour site.

1210 Lunch  
1230 Back from lunch, two men in a pickup truck stop + ask questions about geophysics survey. Watch as geophys. crew sweeps

Kara McGinnis

7-22-92

(69)

parking lot in front of Quonset huts

1310 Return to trailer + walk out to dual tube rig @ DB-1 location. Meet Sue on way out - she's going to lunch.

1320 Arrive @ DB-1 location. Drillers say they hit a sandy clay layer ~40' down. Jeff (Warrzyn) says they've been having a problem w/ sand leaves - clogging up things so they can't sample.

1345 Jeff attempting to collect a gas sample w/ stainless bailer. Only getting lots of sand in bailer. - Measured down w/ water level tape. @ ~51' w/ 9" of water. several attempts w/ hand pump also failed to get a sample.

1440 Back @ trailer to discuss w/ Sue - sample collection.

1450 Walk back to dual tube rig - still no sample. Back @ trailer to wait until sampling technique is resolved.

Kara McGinnis

(70)

7-22-92

1545 Told by Wlazyn that no further work will be done @ dual tube air today. Shallow soil boring dig has mechanical problems & Avin has shut down soil gas surveys.  
 1610 Getting water samples from SB-12 (for semi-volatile analysis) & SB-19 (fuel suite).  
 1620 Leave site for shipping cooler w/ soil samples to FedEx. First ge buy small cooler @ K-Mart.  
 1730 Packing samples & ice in cooler.  
 1748 Leave for FedEx.  
 1810 Drop cooler @ FedEx station.  
 1830 Return to hotel. day ended.

~~data~~

~~14~~

~~Ge~~

~~Ge~~

~~Steve H. Gault~~

7-23-92

(71)

0710 Arrive onsite. Jeff (Wlazyn) is only one here. Sue Havens arrived.  
 0730 Jeff tells us that the auger rig will be down until ~ 2 p.m. due to hydraulic problems, the soil gas survey is postponed until next week and the dual tube rig will be running later. Drillers are going to set a stainless steel wellpoint inside the dual tube & try to sample the groundwater.  
 0750 Mark, the GC operator says that GC results on the geosol (DB-11) well boring (GB-1) showed 1,1'-DCA ( ), TCE, at 39' interval.  
 0950 Jeff Saegs says he'd waiting to find out if he can get the stainless well screen & rigors today, or if they will have to be ordered & shipped to arrive tomorrow AM (~10am).

72

7-22-92

23 KMC

at earliest). Jeff says if the stainless has to be shipped, they'll shut down the dual tubing until Monday. The only work to be done today is probably well abandonment, & tomorrow they may put in monitoring wells.

DAO Called Gail MacMillan & told her current situation. She said that if dual tube rig shuts down til Monday, I can probably go back to Chicago tonight.

Jeff is still on phone deciding on what to do w/ dual tube.

Still waiting on parts for the auger rig.

1050: Out @ dual tube rig. Will attempt to drill down a few more feet & try to get a sample at 255'. Jeff is collecting a "nonqualifying sample" to VOA's ("Nonqualifying" because only 2 volumes were removed, not the required 3).

Kara A McQuirk

7-23-92

73

1105: Driller couldn't use air to blow out sand in tubes, so had to pull out dual tubes & blow it out @ surface. Sand was packed tight inside the tubes.

1110 Reinserting Re dual tubes

1140 At 56' w/ 4' of sand blow in. Will let sit during lunch to equalize then purge.

1150 Break for lunch.

1245: Back at site - walk out to dual tube rig @ D3-1. Drillers are starting to purge well. At 56' encountered sand & trace gravel.

1315 Purged just over 1 well volume (4 gal) & waited for water level to recover. When driller wants to start again w/ purging, b.k pump was stuck. Unable to unstick it, are pulling out sections of pump. One of the outer sections of the pump cracked & a piece broke off - jammed the inner plunger. One replacing it & will reinsert.

Kara A McQuirk

7-23-92

(74)

1340 Ready to start pumping again  
1350 Breaking down pump segments -  
will purge w/ a barrel the  
rest of the way. Removed an  
additional 3 gal or so.

1400 Began hand bailing. Water  
is a med. watery orange, then clear.  
1415 Collecting sample - water is a  
watery orange.

1420 Resume drilling. Drill to  
60' - passed thru a sandy  
opened on way down. Will  
sample this interval.

1430 Began hand bailing  
1445 Switching from bailing  
to air lifting. One volume  
removed by bailing one by  
an lift. Will switch back  
to bailing last few barrels

1510 Collecting sample at 60.5'  
Water is med. orange color.  
1515 Drilling next interval - getting  
a med opened in after bailed.

1530 Return to trailer to check  
Kana McQuinn

7-23-92

(73)

GC results. Mark (Wolczyn)  
said that 2:12 noon his computer  
"froze" + he had to reinitialize.  
1400 Back @ dual tube rig.  
Rig is @ 30' down in the top  
a little way. Had gone thru a  
fine sand + went into the  
slit (core) just away to Road back to  
16KMC sand. No a sample can be  
16KMC collected.

1445 Bailing by hand prior to  
1455 collecting sample.  
1455 Collecting sample, med orange  
1700: Finishing for the day.  
Will pack sample + drive  
to FedEx dropoff.

1715 Leave for FedEx  
1830 Return to hotel, done for day

Kana McQuinn

76

7-24-92

0720 Arrive @ site Will  
watch dual tube rig today.

0730 Ride out to dual tube rig  
w/ Jeff. Jeff says the drillers  
will basically case this hole,  
DB-1 down to the bottom  
(~80') where there's a semi-  
confining layer - a clayey silt.  
The hole will not be sealed, in  
case of future sampling.  
Drillers will then decon +  
move to DB-4.

0830 Drillers finish setting casing.  
Bottom of the hole is @ 81'.

Drillers packing up to move  
to decon.

0900 Return to trailers, drillers will  
decon.

GC results of DB-1:

56': +1.7 ug/l toluene

0.8 ethyl benzene

+1.0 total xylenes

2.2 1,1-DCE

5.0 1,1-DCA

2.7 1,2-DCA

Kara McBrink

7-24-92

77

43.3 ug/l 1,1-TCA

3.3 ug/l TCE

60.5': -0.1 ug/l toluene

0.9 1,1-DCE

5.0 1,2-DCA

29.2 1,1-TCA

2.2 TCE

Values < 5 ug/l are below  
detection limit, therefore  
are not certain.

81': 6.0 ug/l 1,1-DCE

1.4 ug/l 1,1-DCA

61.7 ug/l 1,1-TCA

13.8 ug/l TCE

1030 Arrive at GB-1 location to  
grout up geotech boring. Depth  
to bentonite is 14.7'. Drillers  
are pouring bentonite powder  
down the hole + hydrating  
w/ a water hose.

1045 Backfilling complete. Top 1'  
filled in w/ soil.

1055 Back @ trailer. Note: DB-1  
was drilled ~1 foot into  
clayey silt/silty clay, not 3'

Kara McBrink

(78)

7-24-92

as plan starts  
 1130 Arrive @ DB-4 location w/  
 dual tube rig. Set up rig  
 1145 Drilled break for lunch.  
 Go to soil boring (4KMC) Rig -  
 they say they'll work for another  
 (day - KMC) noon. Then quit  
 for day. Sue will watch the  
 dual tube rig after lunch.  
 1200 Leave site, return to  
 Chicago.

Kane H Bank

Hog Bank

Sue

7-27-92

(79)

8:00 Downs arrives at site  
 Meets w/ Sue Havens  
 and get update of site  
 activities.

8:40 Arrive at location W-23

Delays are occurring this  
 morning because a PVC  
 riser was dropped in bore  
 hole. They are trying to  
 retrieve it.

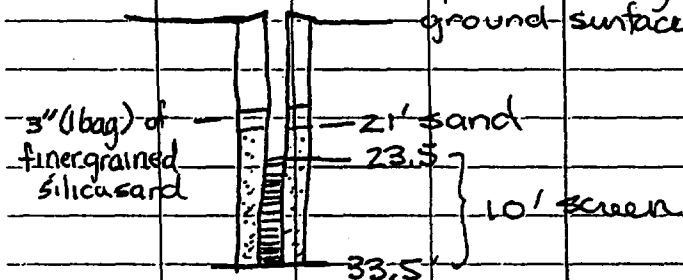
Have retrieved riser and  
 pouring sand in. Several  
 non-contaminated materials  
 including rusty rods, greasy  
 rts, and dirty PVC and  
 rope and wires and measuring  
 tape.

Water level = 26.5'  
 No augers were added today  
 Total depth 33.5' (±.5')  
 Sand to 21'

Down

(80)

7-25-92

PVC well; 2"  
ground surface

Monitoring well - (W-23)

flush mount w/ expandable  
locking capweather: sunny, clear to partly  
cloudy, 65-72°F, 0-5  
mph NW wind10:00 After placing finer sand in  
well, water was added (drilling  
water); More fine sand was  
added; following water input.10:15 Two bags of bentonite crumbles  
were added and are letting  
to set.

D. Davis

(8)

7-27-92

10:30 Another bag of bentonite  
crumbles is being added  
and augers pulled. A  
total of 5 bags of  
bentonite crumbles were  
added so far.10:40 Added water to bentonite  
in hole. Add two more  
bags of bentonite.10:55 An 18" steel protective  
casing over the well was  
installed11:00 Well W-23 complete and  
locked.

11:25 Drilling is being deconned.

11:30 Talk w/ Jeff Ramsby. Sample  
taken at dual tube rig.

12:30 D. Downs and S. Havens to lunch

D. Davis

(2)

7-27-92

13:00 locate well W-3

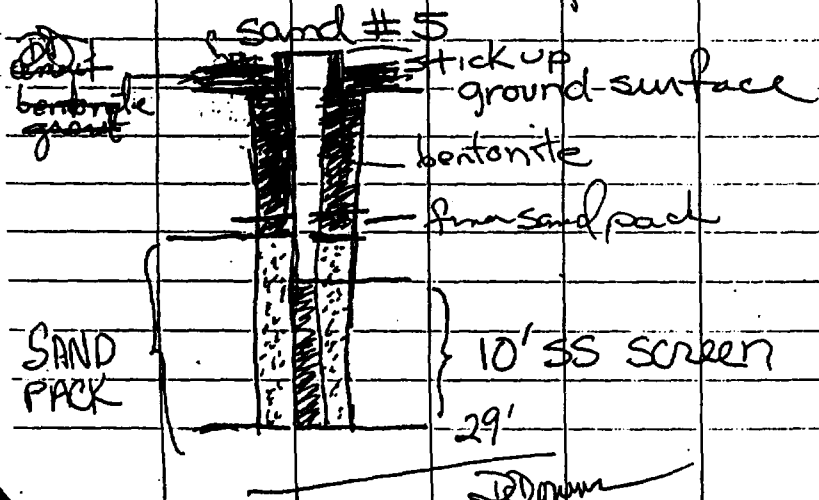
13:25 Begin augering with T-47  
mobile drill rig; 4 3/4" HSA13:30 Photo # 96<sup>DD</sup> + 7

Drilling w/ HSA at W-3; NE face

13:40 Set up screen &amp; risers:

- 1 - 10' screen (stainless)
- 3 - 10' PVC risers (3 of them)
- 1 - 5' PVC riser

13:45 Start set filter pack



(83)

7-27-92

14:25 Photo # 10

Drilling crew setting  
bentonite seal  
facing NE.Total depth 29' ( $\pm 5'$ )  
2" stick up (carbon steel)

7 bags sand #5  
 7 bags bentonite  
 1 bag fine sand

14:35 Finish well at W-3; locked

14:45 Arrive at dual rig  
 They have just placed the  
 poly pipe in well to purge  
 for sample  $\approx 80'$  pipe in  
 well as part of the B-K  
 pump used to purge.

15:00 Purge water is brown; lots  
 of sand (fine)

J. Down

(84)

7-27-92

15:05

Photo # 10

Dualang drilling crew  
 purging well DB-4 with  
 BK pump. Waters  
 being contained in the  
 5 gal. pail Facing SW

15:10

Purge up + down. Stop

15:20

Purge up + down. Stop

15:30

leave DB-4 to go to  
 trailer.

16:00

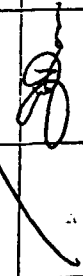
Talk w/ Gail MacMillan.

16:05

Abandoning well W-6  
 because bentonite slurry  
 down well

16:30

DDowns offsite for day



(85)

7-27-92

7:00 DDowns arrives at site.  
 Go to trailer and review  
 activities for the day

7:30

Arrive at SG-57. Dullness  
 crew T47 mobile drill is  
 setting up. I requested the  
 split sample at 3-5 from  
 Jerry w/ Wagnyn. No reply  
 at this time.

Photo # 11

Drill rig set up at location  
 SB-17<sup>th</sup> SG-57. Facing NE

8:05

Found 1<sup>st</sup> split spoon 1-3'  
 Monitoring borehole  $\phi$  w/ Hm  
 On sample Hm =  $\phi$ .  
 Dark gray top soil, dense  
 w/ some gravel. N's seen

8:15

2<sup>nd</sup> split spoon 3-5'  
 sample is dark gray at top  
 (this must be a full) and is



(86)

28<sup>th</sup>

7-27-92

a medium grained brown sand at bottom.  $\text{H}_2\text{O} = \phi$ ; No odor

8:20 Split spoon #3 5-7'

Similar appearance; dark gray! brown layer w/ gravel at top and a very brown medium sand at bottom. Sand is <sup>much</sup> more prominent than the gravel this time.  $\text{H}_2\text{O} = \phi$ . Sand is discolored in areas. No odor.

8:30 Split spoon #4 7-9'

All sand getting siltier at bottom. Brown sand to reddish brown sand; fine to medium; silt at bottom.  $\text{H}_2\text{O} = \phi$ .

8:40 Split spoon #5 9-11'

Sandy at top of spoon to clayey silt at bottom. Brown in color. No odor. No Muckint.

(87)

7-28-92

Split spoon #6 11-13'  
Top half of spoon remains a silty sand w/ some clay. The bottom half is a gray fill material mixed w/ sand and gravel. There was a slight deflection on the H.M.

8:50 Split spoon #7 13-15'

Coarse sand to medium sand, rounded grains, homogeneous mixture. H.M. reading unavailable.

I have asked Terry again for split sample but he said he had more things to worry about than this.

8:55 Split spoon #8 15-17'

More coarse sand with fine gravel

Down

(88)

7-28-92

9:05 Split spoon #9 17-19'  
 Hvu =  $\phi$ . Coarse sand and gravel  
 in spoon. Noticed a rose  
 colored / stained portion of gravel  
 near bottom of spoon.

9:10 Split spoon #10 20-21'  
 Coarse sand at top; clayey  
 silt below. Hvu =  $\phi$

SB-17 near SG-5 near fuel  
 oil tank.

9:25 Split spoon #11 21-23'  
 medium to coarse sand  
 homogeneous texture, brown

9:35 Split spoon #12 23-25'  
 Hvu = slight deflection; brown sand  
 w/ silt, moist; more clay.

9:50 Split spoon #13 25-27'  
 Hvu =  $\phi$ . Silty fine sand w/ little  
 clay; wet, cohesive.

Down

(89)

7-28-92

SB-17

total depth 27'  
 WL - dry in hole  
 soil wet at 25'

10:00 Pulling augers from hole.  
 No sample was collected by  
 IEPA rep. at this location.

10:15 D. Downs leaves QB  
 excavating area at 1314 Watts  
 to travel to trailer (SB-17).

11:00 Set up at Soltenion (SB-8)

11:15 Split spoon #1 1-3'  
 Hvu = 5ppm; fuel/gasoline  
 smell; black soil

11:20 Split spoon #2 3-5'  
 Poor recovery; large gravel  
 in spoon; Hvu = 2ppm  
 gasoline odor; black gravel  
 and coarse sand.

Down

(92)

7-28-92

SB-8: Drilled down another 5' to 25' and spooned to open v.p. formation for water. The hole was purged with a stainless steel bailer and a VOA sample was taken. Approx 1.5 gal was removed prior to sampling. No sheen on water. Gray in color.

13:50 Drillers pulling augers.

14:35 Drillers still decommissioning.

14:45 I asked Terry if they were supposed to sample the wells we put in yesterday. He said that because they were replacement wells which had been previously sampled, it was not ~~just~~ necessary.

*Don*

(93)

7-28-92

15:00 D. Downs packaging sample from SB-8.

15:25 Arrive at W-20B. The drillers are advancing the HSA. The crew is advancing the augers to 30' and letting them sit till tomorrow when they'll put a well in.

15:40 D. Downs observes dual tubing w/ S. Havens. They have reamed down an overpipe and are setting the hole at  $\approx 82'$ .

16:00 Talk w/ Terry, the results from the headspace analysis were:

SB-17 highest  $\approx 18$  in split spoon #6; the 1<sup>st</sup> two were also high.

SB-8 ~~SB-10~~ all below 1 ppm. One was 0.9 all others were zero.

7-28-92

16:30 D. Downs leaves site to  
take samples to Fed. Express

17:30 D. Downs returns to hotel  
after going to Fed. Ex

DD

7-29-92

(95)

Weather: Sunny (partly cloudy); 68; NW wind  
7:00 D. Downs arrives at  
site

7:10 Observe development of  
W-20 with Total Depth 29.9'  
Developing by purging and  
surging formation w/ up +  
down motion of PVC baller.  
Recharges well. Water  
brown. Baller 5'. Bailed ~  
20 gallons.

7:40 Photo # 14  
Terry (Warynn - Geologist) bailing  
W-20 for development  
purposes. Facing E.

7:45 The T47 mobile drilling  
has pulled the augers that  
were drilled yesterday at W-20B  
and are redrilling so samples  
can be collected every 2.5' in  
the borehole.

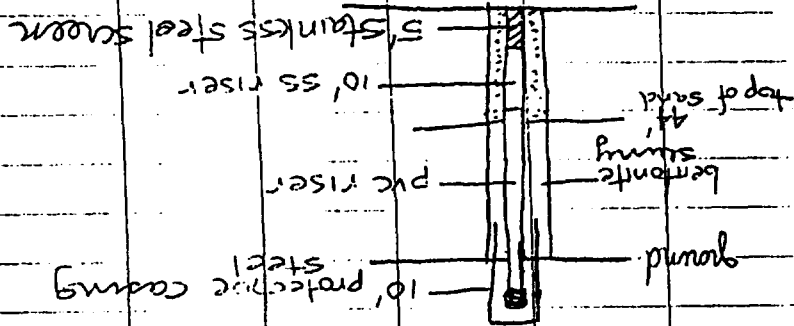
DD  
7/29/92

DD

110

7-31-92

W-19B



10:45 Placed 10' protective casing in well.

10:15 Inverse bentonite slurry down well for seal: 50lb premium gel bentonite, 50lb bentonite cumbles to hub of water.

Dadders went to get more sand to fill around protective casing.

8 Sand 150

-115

4' top of sand

111

7-31-92

1:00 Locate W-19 and begin drilling

Drilling W-19 just east of W-19B.

TD of 19B 10.1

-50.9

TD = 59.2' W-9B

Well labelled and locked

11:50 Drilled down to 28' with 4 1/4" HSA

Place 10' ss screen and 2-

10' pvc riser in well W-19

12:05 Pouring sand #5 for filter pack

Well set at 27.5'

13:20 133

115

17' top of sand now.

12:25 16' top of sand in well

204

Name **SUE HAVENS**

Address **EBASCO**

Phone **(302) 988-7202**

**SIGNED OUT BY**  
**A. Puri** **07/10/92**  
**(970-3518)**

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DT-0659

Pro

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Projects (continued)

MEM

7-13-92 IEPA 8652.142-01.

0830 Gail MacMillan arrives  
at Beloit Corp - Access to  
trailer denied by guard  
because no Wazyn employees  
on the Beloit Corp property.

0845 Kevin March Wazyn  
arrives. G. MacMillan  
allowed access.

0900 No soil gas or drilling  
being performed yet.

Weather: Overcast and  
light rain off and on -  
occasional heavy rain.

Temp: approx 68°F

0900 Jeff Ramsby arrived at  
trailer.

0915 Mark Pauli Wazyn, GC  
Chemist arrived at site.

0945-1030 Heavy rain -  
No outside work performed.

10:45 Portable GC being  
calibrated. PLO MEM 7-13-92

11:30 Drilling has arrived (earlier).  
Wazyn is organizing VAB  
for soil gas sampling.

Gail E. MacMillan

7-13-92 JEPA 8652.142 - 0.2

12:00 Lunch Break

G. MacMillan and Warzyn employees leave for lunch

13:05 G. MacMillan returns to trailer, Warzyn already on site

13:30 Warzyn marking and recording locations of gas sampling points near the classifiers located northeast of the Research & Development building.

Soil Gas (SG) location 61 can't be in planned location due to addition to Research and Development Building being constructed on the north end of the building. SG Loc. 61 was moved to northeast of the Research and Development Building.

SG loc 62 was moved slightly North due to construction

14:10 SG sample collection underway @ Loc 61.

Saul E. MacMillan

7-13-92 JEPA 8652.142 - 0.3

14:40 Loc 62 - SG sample collected.

14:50 Warzyn decontaminating probes

15:00 Loc. 63 - SG sample being collected

15:10 Loc. 65 - SG sample being collected

15:20 Preparation for Loc 64 SG sample collection

15:40 Sample @ Loc 64 complete

15:45 Warzyn decontaminating probe tips. External surfaces of gas probes + pilot rods are not being decontaminated as described in the QAPP. Internal volume/surfaces decontaminated via purging with air. Only the probe tips are being decontaminated between samples.

15:50 Loc 66 - Soil gas sample being collected.

According to Warzyn, the highest P.I.D reading so far

Saul E. MacMillan

7-92

4.

was approximately 5 pm at  
loc 62 oc 66, STD readings  
approx 0.5-1.4 ppm. The  
ground is very wet due  
to rain this morning and  
is saturated in some locations  
as seen by standing surface  
water. Temp is approx 78°F.  
16:10 Wazyn + Elbasco return  
to trailer. Sue Hansen  
(Elbasco) arrived at the  
Belget site at approx 14:30.  
16:30 Thunderstorm with heavy  
rain.  
17:30 Elbasco leaves Belget site  
properly.

Cal E. Mac Miller

7-14-92

TEH 8852, 112-05

Elbasco covered site @ 08:00  
Wazyn already at ocular  
weather. Raining; temp approx 60°F  
Wazyn crew in process of  
abandoning stand pipes.  
Elbasco in breaker recovering  
preliminary for deployment.  
11:00 Wazyn attempting  
sampling.  
Sue Hansen takes over reading in  
log book.  
11:20 Depart trailer in search of Wazyn  
501 gas steel Kevin to much indians  
Shawens and G. McMillan that crew  
is sampling in residential area.  
1140 Return to trailer unable to locate  
Wazyn crew, head ~~to~~ <sup>was</sup> and TEH  
personnel at trailer  
1155 Depart for lunch with IEHA  
1305 Return from lunch, Wazyn + TEH on site

Sue Hansen

7-14-92 S34	ITM 85221-05 #304	7-14-92 S34	ITM 85221-142 #307
1327	Begin. -illing shaft 1/4 in. bearings #	1420	S34 Split Spoon Sample Gravelly sand
1328	Still running Bore SB14	1430	Geologist fills sample jars 6 jars
1336	Take split spoon sample with 1411	1438	4th Split Spoon Sample - Still not driving well
1346	2nd Split Spoon Sample	1447	Sample taken early approximately 6 in. penetration
1358	3rd Split Spoon	1456	not penetrate cobbles - gravelly soil
1411	Geologist fills 2 VOC jars, 1 VOC, 1 Metal, 1 head space sample appears to be gravelly sand	1459	head space jars
1411	Geologist fills 4th Split Spoon	1507	10th Split Spoon Sample
1411	Geologist fills 5th Split Spoon	1523	14th Split Spoon
1411	Drillers clean splitspoon between each sample	1523	2 VOC and head space sample taken, not enough
1411	Sample	1523	Sample for Slog, metals and AEs
1411	Sample	1523	Sample for Slog, metals and AEs
1411	Sample	1523	Sample for Slog, metals and AEs
1411	Sample	1523	Sample for Slog, metals and AEs

IEPA 8152.12-09

7-15-92 531

0719 Arrive on site and sign into guard station  
0725 Arrive at trailer and talk with  
Warren about today's field operations  
0730 IEPA personnel arrive. Talk with  
Paul <sup>10:05</sup> ~~talks~~ about sampling and  
day activities

0744 Arrive at Drill site 681

Sunny, clear sky about 60°F  
Check drilling location, location has  
been move across the street - Blackhawk  
Blvd. East side of street, moved because  
it was previously sited in a residents lawn.  
Drill crew is mudlogging up

Geologist for Warren Jeff Ramsey  
Driller Larry Stewart Lane drilling  
Helpers Brian Anagnostopoulos, Joe Thar  
0820 Begin drilling and surface sampling  
first sample top soil  
second samples (brown, silty silt with  
sand and gravel high water content  
due to drilling method.

0833 Taking 3rd sample  
0905 Hope to strike hammer broke before  
3rd sample could be completed about  
1 inch short of 2' drive  
Success of 3' drive

IEPA 8152.12-08

7-14-92 531

1535 12th Split Specimen sand content increasing  
Geologist checks with HAV, increased  
sand content is allowing the sampler to drive reversed  
at 1 1/2 ft of sample, 6 sample jars (including  
head space) filled.  
1546 12th Split Specimen  
48/48/45/40 lbs

per checks as started by helper & 15' increased  
Geologist checks with HAV, generally sand  
Geologist fills sample jars and head space jar  
1537 17th Split Specimen sand, silt at 28'  
15' recovery Geologist checks with HAV  
fills sample jars and headspace jar  
1611 Recovering samples from hole  
1622 Add 4 50 lbs bags of cumin and  
water and gravel to plug borehole  
1630 Leave site with Geologist - Return  
to trailer to check headspace with  
FID, FID does not stay lit.  
1710 Leave trailer

~~Success of 3' drive~~

7-15-93 SJH

JE 8652-4750

- 0907 Geologist - Jeff Ramsby departs site  
 Drillers removing sampler from ground  
 0914 2nd sample <sup>sample</sup> grading into sandy  
 gravel <sup>sample</sup> 75% recovery in sampler (2 sampler  
 1 1/2 recovered) Top of sampler dry sand 10'  
 0920 Commenced drilling  
 0935 Geologist returns to drill site and  
 fills jar with sample (10' sample)  
 0937 Stop drilling, waiting on new tape  
 for sampler  
 0950 Drillers shut down rig waiting on tape  
 0952 Stevens Departs drill site for truck  
 to check in  
 1020 Start watching soil gas crew location  
 5846, PID reading low,  
 1030 Return 58 probe, moving to next location  
 1045 Taking soil gas sample 4756  
 PID reading about 1 ppm - o.k.  
 Return to drill site 681 drillers  
 have replace tape and are in the  
 process of taking 4th 15' sample  
 water saturated sandy gravel 90% recovery  
 Taking 5th sample at 20'  
 1130

Sueann J - 11/24/93

7-15-93 SJH

JE 8652-4711

- 1137 Paul Tarkenton notes a shower on the mud  
 Slurry appears it out to J. Ramsby and  
 J. Ramsby states that  
 1145 lost the mud. Mud's from umbel Bentone  
 1158 Sample 20' (5th) Gravelly sand  
 1149 Taking 6th 25' sample, Drillers lubricate  
 tape holding sampler with King Stuff  
 to keep rope from bucking and lubricating on  
 cathead. Drillers are also using a grease pencil  
 to mark pipe holding sampler. Sampler is  
 laid on the ground <sup>and</sup> (after decan)  
 while waiting to go down the hole for next sample  
 1209 20 sample gravelly sand  
 1210 Depart site for lunch  
 1235 Arrive at drill site 688 Drillers Present  
 1300 Geologist Arrives at site. Drilling begins.  
 1327 Taking 38th sample (7th) 30-32'  
 1351 Gravelly sample Coarse sand with gravel  
 1410 Taking 39th sample (8th) 5' Havers checks  
 with J. Ramsby sample 32.5-34.5'  
 Drillers having trouble pulling up sampler  
 outer casing is pulling up also  
 1505 Examine 35-34.5 sample mostly clippings  
 Very small walnut sized bit of clay <sup>and</sup>  
 10 bottom of sampler <sup>sample</sup> every 2.5'

Sueann J - 11/24/93

7-15-92	SSH	TEPA 8652, 1412-12
1330	3rd day sample, sampler will not drive 75/100 (blows per ft)	
1400	Examine sample. 2nd day clay reddish brown with trace gravel, sample rejected because of visible bedrock in bottom. J Ramsey selected clay sample at 34'. Previous sample is also mainly cutting there for unworkable to fill whole clay layer selected.	
1412	Taking sample Jan 10 375-39.5	
1430	Sample isolay with frame grinders	
1445	Geologist departs 388-42, 501	
1459	Taking Sample 39-44 Jan 11 511	
1505	Geologist arrives back at site looking open sampler 39-44, 511.	
	Clay with trace pebbles	
1710	Grinders clearing up for the day	
1735	J Ramsey departs drill core in trailer to electrician?	
1740	Leave trailer for the day	
<del>Sunday 7-16-92</del>		

7-16-92	SSH	TEPA 8652, 142-13
0702	Sam in red sealed storage	
0705	Check out trailer	
	Personnel suggests going to drill site, drilling core possible present.	
0710	Arrive at drill site	
	Driller, Larry Brewer, helpers - Brian Anagnostopoulos, and two men present. Clarence Geologist has not arrived.	
	Cloudy day about 35-40 F, ground is wet from last night's rain.	
0715	Clarence Geologist Jeff Ramsey arrives on site, Crew making mud	
0732	Begin drilling	
0749	Begin taking sample	44.5-44.5' 7-16-92
0753	Finish sample. Brown clay trace gravel	
0829	Sample 45-47' Jan 13	
	Brown clay as above.	
0839	Geologist departs site	
	Weather has cleared up. Sunny and blue sky, a few high clouds	
0851	Take sample 47.5-49.5	
	Sampler will not drive reduced after 12" blows 60/100	
0900	Geologist returns	
	S. Havers talks with Mr. Havers about Sundays Havers	

7-16-53H	TE9862.142-14
King Staff (being added to log) Miller says he is not sure what it is a vegetable - something. Sample 475-49.5 is still clay with gravel inclusions. Samples being taken every 2.5 ft. instead of every two ft as indicated in the 6th April One log assurance Plan.	
0940 Replacing rope for sampler 1011 Taking sample & sampler will not drive releases for sticks, physical drilling 1021 Sampler hung up on bit 1027 Apart site to trailer to check it. with project manager 1107 Arrive back on site. Driller's closeness ing problem with sampler hanging up on bit (bit 52.5"). Decide to change cut mud. They think there is too much sand in mud. No sample in sampler. Just cuttings. Planning to drill then try to sample again. 1120 Depart for speaker 1135 Go to lunch 1242 Back on drill site, drillers have lunch. J. Havens	

7-16-53H	TE98 852.142-15
buelling's old mud and core. arriving. 1355 Geologist arrives on site 1317 Drilling 1342 Circulating, having trouble getting mud which enough, possible because of formation water 1430 Mud thick enough getting gravel cuttings returning to surface. 1443 Saw hole with sampler 1448 Taking sample, Geologist is sampling buried of mud (mud previously buried because it was full of sand). Geologist stated that the mud samples will be run through G.I. unit to determine if they are contaminated. If not the mud is not contaminated (a core to be taken) barrels will be changed. 1456 Sampler is unable to get mud 153 Plans for 6". Sample attempted at 52.5' Sample (52.5') is Gravelly Clay drilling 1508 Run in hole with sampler 1520 Taking sample. 53-57' Saw J. Havens	

Time	Activity
7/4	STH
0910	having new pump sent down decide to wait until Monday and bring samples with them.
0910	Drillers begin clearing up site for weekend.
0930	S. Havens departs. STE. Driller discuss soil gas activities with Soil Gas crew. Crew will sample in fibrous strudge spreading area until noon. Crew will start about at noon to allow GC to catch up.
0945	Discussing day activities with D. Burns and working up weekly reports.
1000	D. Burns taking w. P. Thoms on phone. S. Havens talks to P. Thoms also. Discusses sampling, gamma ray logging and capitating. P. Thoms Monday.
1000	D. Burns departs trailer to work soil borings, S. Havens arriving weekly reports.
Susan J. Havens	

Time	Activity
7/4	STH
1135	making soil gas readings at S315. No reading over top at this hole.
1145	Take soil gas blanks. P.D. reading C.
1145	Soil Gas crew says they have not gotten any read above 1 ppm today.
1150	Soil Gas crew returns to trailer.
1230	S. Havens check in with D. Burns on Shallow borings rig.
1230	try to call Project manager to give her update.
1300	Return to trailer. Call 2pm personnel bringing samples. P. Paul, reading GC. No samples yesterday and on today have gotten readings above 100 ppm.
1330	have to strip soil samples and to make phone calls to project manager soil gas expert's checks on effects of soil moisture on soil gas logging excess. (to discuss on effects of water table sitting on ground log) and discuss to what effect.
Susan J. Havens	

7/20/92 SJH

IERA 8652 142-20

- 0720 Arrive at drill site, drillers making ready to drill.
- 0725 Check in with Beloit Guard
- 0730 At Wareyn trailer meet  
Wareyn <sup>RI</sup> project manager Jim Maser  
Cara arrives brief her on shallow soil borings and soil gas. Talk with Wareyn about today's activities.
- 0800 Arrive at drill site - mudding up  
Driller: Larry Stewart  
Helpers: Brian Anagnostopoulos, Lou Thon  
Wareyn Geologist: Jeff Ramsby  
Weather Partly Cloudy, 61° F
- 0824 Drilling hole silted in over weekend
- 0830 Tripping out of hole with full drill string. Going to take Split Spoon in open hole. Too much trouble trying to sample through bit. Laying bit on ground
- 0845 Tripping in hole with sampler.
- 0858 Sampling - driving well.
- 0910 Sample at 60-62 Sand with Gravel 25% recovery in sampler
- 0930 Tripping in hole with drill string  
S. Havers departs site to check in with soil gas crew and cut Paul  
Steven J. Havers

7/20/92 SJH

IERA

- 0950 Catch up with Soil Gas crew in Gravel Pits. Ground is very wet from last night's rain, standing pond in roads. Crew just took readings on SG 97 moving to new location.
- 1002 Location SG 102 PID = 0 ppm
- 1018 Mark Pauli (GC operator) picks up samples. Move to new location
- 1023 Location SG 103 PID = 1.0 ppm - 0.5 ppm
- 1038 S. Havers depart Soil Gas location SG 103 to check on 681 Boring
- 1044 Geologist examining sample from 65-67' sand.
- 1106 S. Havers checks to see what type of Bentonite is being used <sup>SJH</sup> in mud. Bentonite is from WY
- 1109 Sampling
- 1123 Examine sample 67.5-69.5 sand with gravel 25% recovery in split spoon. Geologist talking with M. Hadcliff and another gentleman from Beloit Corp.
- 1135 Running in hole with sampler
- 1144 Sampler will not drive easily  
Steven J. Havers

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I EPA

192-5TH

J. Havens talks to Geologist only  
driving samples for "12" instead  
of "12" to save time.

1148 Shaking down for lunch. Sample  
still in borehole

1200 Check in at Warzyn trailer  
Basco Ecologists and Fish assess-

ment people present.  
1215 Depart site for lunch

1235 At GB1 drill site, drillers pull  
sample out of borehole

1243 70' Sample coarse sand and gravel  
Drilling

1255 Taking sample. Sample driving  
hard. Drilling for 12"

72.5-74.5' orange sand, sand is  
primarily quartz rock. J. Havens

is not sure that orange color is  
due to iron staining, could possible

be contamination. Geologist  
says he will take a headspace on

sample. Found to be enough quartz and minerals  
to make mineral sample

1324 Tripping in borehole for sample  
above sample for 18" 36/79/76

blows for 6")

-Susan J. Havens

192-5TH

1343

75-77' Sample orangish brown  
sand with trace gravel. orange color  
not as prevalent as previous sample.

45' no recovery in split tube. Depart site  
Return to drill site after talking

with Paul Takas. Sample 77.5/79.5  
taken while J. Havens was at trailer.

Sample is a fine grained quartz  
sand tan in color with minor amount

of mafic minerals and feldspars -  
drillers changing rope on sampler

Find Geologist J. Ramsky at  
trailer ask if he did a headspace

on orange sample. He did with  
HNH (being used by shallow soils

Geologist Terry Marx.) HNH gave  
no reading. J. Havens until 15.5

cut to shallow soil boring rig -  
HNH is a new one not the HNH

that was previously not working.  
Return to GB1 site running in

hole with sampler  
Depart site to wait for phone

Call from P. Takas  
Sample take while J. Havens

-Susan J. Havens

7/2

SSH	IEPA	24	IEPA	25
at Warzyn trailer line grained sand with <sup>SSH</sup> iron staining. Tom in color with isolated areas of iron staining			Sign in a guard station proceed to Warzyn trailer and check it with soil gas crew. Tom says he will be taking readings along railroad tracks and in the residences.	
Return to Drill site			Arrive at GB1 drill site. Drillers get ready to drill.	
Sample 85-871 <sup>remains sample into SSH whole</sup> from core hole sampling through the drill string and bit.			Larry Stewart	
Sample taken at 86.5' not 85'			Ken Thon & Brian Anagnostopoulos	
Sample drive for 12" 43/603 blows			Warzyn Geologist: Jeff Ramsey	
Sample is a fine grained sand grading into a clayey silt sands of iron staining			Weather: Partly cloudy, cool 55°F	
Drillers cleaning up for day			Sample 90-92	
Depart drill site for the day			Clay gray - fat	
Check in at trailer			Talk with Paul Takacs	
Check in on Soil Gas crew at 56'60 (along railroad tracks)			Catch-up to Soil Gas crew taking sample 5670 PID = 0 Sample 53	
Tom states no readings have been recorded along railroad tracks			behind shed 3 5gals jugs of motor oil next to sample location	
Leave site for day			ground is wet and muddy. 9/4 Watts move to new location behind 910 Watts	
			Wells 61304 & 6135 are in same area	
			Warzyn picks a location "up gradient" of wells next to utility shed	
			5669 PID = 0 to 0.1 ppm	
			Well W18 on site also	
			Steven J. Haworth	

Steven J. Haworth

7/2 534 26  
 0857 Soil Gas Crew heads for trailer to turn in sample to GL operator. S. Havens checks in with borehole B1. Sample 95-97' is also a gray clay  
 0914 S. Havens discusses drilling with J. Ramsby. J. Ramsby says hole TD at 100ft in day. S. Havens observes gravels being circulated to surface probably from hole sluffing in  
 0918 S. Havens finds Soil Gas crew at 905 Watts. J. Moser talking with resident  
 0922 Sample 5681 PID = 0.1 ppm location at 905 Watts next to asphalt driveway and next to <sup>possibly</sup> pan used to change oil. Ground stained with oil next to 56 location approx. 2 1/2' away  
 0938 Move to new location 909 Watts resident not home. Crew leaves, moves to new location  
 0944 1004 Watts, Soil Gas Crew picks a location behind utility shed.  
 0954 Taking sample at 5684 PID = 0.9 to 0.4 ppm  
 Swain J. Havens

7/92 534 27  
 1005 Depart. Go to use the phone  
 1023 Find Soil Gas Crew at 1304 Watts  
 1025 5694. Oppm. Depart site to check on 681 when hole will be logged  
 1120 At 681 logging borehole Geologist Terry March cranking up gamma log probe  
 1128 Finished logging - pulling up probe clay layer from 56-32 Approx. ft Shows up well, decr. gamma probe log zeroed at top of hole. S. Havens asks to see log after it has been marked for depth and scale  
 1155 Leave for lunch  
 1250 Return to Warzyn trailer no one present  
 1300 At drill site 681 Drill mixing grout - thick bentonite slurry  
 1317 Slurry being pump down borehole  
 1330 Do not pump bentonite to surface per Field Sampling Plan. J. Ramsby says they will pump bentonite to 44 ft then follow with bentonite pellets and soil. That the Sampling Plan  
 Swain J. Havens

1/21/92 SJH

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is out of Date and they are  
follow 1991 EPA guidelines.  
He gives S. Havens a copy of  
new Regs. S. Havens goes and  
consults with Kard. Decides  
to discuss with P. Takacs in  
morning. Checks with J.  
Moser to see if plan is really  
out dated. S. Havens goes

1400 to watch EM grid being set-up

Art is <sup>EM</sup> operator for Warzyn  
is make assessment of metals  
a cultural features  
Equipment EM 31 from Geonics  
Art is documenting metals in area

1430 S. Havens goes to make phone  
call to project manager.

1450 S. Havens talks to J. Ramsby  
about when he will finish abandon-  
ing GB1. Says as soon as Sherry  
in hole settle out. Rig is in yard  
deconing. J. Ramsby and J. Moser  
are showing S. Havens different  
sections in IL regs that apply to  
abandonment of GB1.

S. Havens

1/21/92 SJH

29

S. Havens will check with P. Takacs  
as to what regs apply and  
how hole should be abandon.

1510

At 1314 Watts LB Excavating  
mag survey underway Ray  
operating. Ray taking readings  
and writing them down at ends of grid

1518

Art <sup>from</sup> starting EM survey take to  
directions of reads (north-south &  
east-west) at each station. Grid  
is same as magnetometer turning  
East-west (from street to building)

1524

Ray moves to center of site and takes  
a reading and records value. Then  
moves to street to start new line of grid  
Warzyn Van moves on site to do  
soil gas

1529

1544

Taking Soil gas readings SG3  
just west of 1314 Watts Building  
in driveway

1546

Ray takes reading at center  
station again. S. Havens will ask  
if that is the base station.

1547

SG3 PID = 0.1 ground is wet.  
puddles in area are bubbling and

S. Havens

7  
2:51H

1539 At taking readings at center  
point (Base station?) Yes it is the base.  
EGG 856 probe May with gradiometer  
attachment. Former Applied Technology  
SG 4 located west of building  
north of El Ray trailer  
PID = 0.1 to 0.2 ppm. Need to retake  
sample bag did not fill properly  
PID = 0 ppm at SG4  
Decon probe then move to new  
location west and south of shed  
next to oil bottle and next to  
old fuel oil tanks. Probe  
Pilot hole very hard to direct. I think  
he broke through something  
driving the hole  
1645 5.6 ppm dropping down to  
2.3 ppm when gas bag is filling  
dropping to 1.5 ppm finally 1.3 ppm  
Leaving site for Van  
1645.55M Checkin with Geophysists. They are  
processing data. S. Havens departs for  
day 1930

~~Sumner J. Havens~~

192-5TH 31

0715 Sign in with Relief guard and  
proceed to trailer.  
Warzyn get ready to sample septic  
tank at Trills residence. P. Takas  
going with them. S. Havens checks  
with J. Ransby on completion of  
2750.55M 281. J. Ransby say they will add  
further evaluations fill 1.3' of surface  
0150 then fill with soil.  
2732 S. Havens checks on Geophysists  
at Soherian PRT is doing a  
reconnaissance with the EMI. Says  
that guard hut is are affecting  
survey and the EMIS not even  
reading over head power lines  
well. He is not sure if he will  
be able to resolve any tanks.  
0820 S. Havens leaves for Waverly trail  
find shallow soil rig gone  
M. Paki does not know where.  
J. Ransby says by lagoons.  
0835 S. Havens locates rig and walks  
into it. Location 2718  
0840 Drifts cleaning up. S. Havens talks  
with T. March Warren Geologist  
~~Sumner J. Havens~~

192

554	554	32
0851	like a chest plant	
0852	T. Hanks says they hit water at 12 ft. No shell reading -	
0853	shell being effected by water (very active in drilling location) That they encountered fill with almost the water table. He thinks he will ship samples back and 12 ft. No all samples had good recovery.	
0854	Depart site and drive over to drill site	
0855	Setting ready to start AB! with decoring tape and water sampler.	
0907	See the paper taping machine. T. Hanks says tape reading will make calculations and drilling summaries.	
0914	Run Antegastopoulas deans back the lowering water sampler down hole. Sampler is a stainless steel bailer. Bailer comes up empty. Shut down operations.	
0918	S. Hanks talks with T. Hanks	
	Steven J. Hanks	

193

554	554	33
0937	about where they hit water. T. Hanks says they are not sure that wells in area hit at 21'. The bailer is not operating properly and they are going to have some more to get it in operation again.	
0937	S. Hanks returns to business station. The low rig is decoring in good. S. Hanks returns to station to write up reports and wait for operation to begin again.	
1038	Weather raining hard. 5 ft of approx. loose powder for shallow soil boring in sand pit.	
1035	Arrive at location. SB 19 station stake. Setting up to drill. Still raining. Due to rain observations in log book will be made in pencil.	
1041	Understand power light truck pulls on site then departs.	
1044	Begin drilling.	
1049	First 10 ft. of hole is a...	
1053	As drilling continues with a...	
	Steven J. Hanks	



2/9/92 SSA	36	37
1330	S. Havens talks to P. Takacs about sampling, well abandonment and water sampling.	S. Havens signs in with Beloit Guard
1400	S. Havens stops at north side of lunch.	S. Havens and K. McQuinn at trailer waiting for field activities to proceed. Both rigs are not working. Shallow boring rig being repaired and DB1 rig waiting on equipment to aid water sampling.
1420	S. Havens checks borehole logs, taped over with duct tape.	S. Havens writing weekly report.
1430	Walks out to DB1. talks to K. McQuinn.	Fail with P. Takacs about DB1.
1445	K. McQuinn checks with EPA lab to see how much sample needed for DB1.	P. Takacs has no problem with iberzys advancing hole and skipping sample at 44'. S. Havens drives out to field and informs K. McQuinn.
1455	S. Havens repairs for DB1 boring near high SB read SB 32. Talks with Terry March. Water by gas loggers about collecting split samples.	S. Havens and K. McQuinn leave DB1 and go to lunch.
1500	Trailer have mechanical problems with rig.	S. Havens at Warzy's trailer.
1520	Rig pulls into deer yard.	Shallow boring rig fixed and waiting at location SB20
1600	Collect samples from T. March from SB 12 and SB 19 (11-3' full suite) (SB 12 BNA 11-13').	outside door of Beloit plant building south side of building at SB 32 soil gas sample location
1430	Leave site to pack and ship above samples.	chillers waiting on a Warzyr geologist.
	Susan J. Havens	Susan J. Havens

1830	Drop sample off with FedEx
1715	Back and ship samples
1656	5. Havens departs drill site
1647	Rig shifts down for day
1638	5th sample empty 15-17ft
1627	5th sample (sandy gravel) empty 9-11ft
1614	4th sample 7-9ft sandy gravel, tan
1610	3rd sample 5-7ft sandy gravel, tan
1609	2.5 ppm
1604	Dr. Miller grabs HNU to test hole
1559	drilling something very hard.
1552	Dr. Miller grabs HNU to test hole
1548	2nd sample 3-5ft sandy gravel
1540	5th sample 1-3ft 10% recovery
1535	1st sample 1-3ft 10% recovery
1530	Begin drilling 5821 approximately
1525	5ft from 5820 (5ft West East)
1520	and gets ready to drill.
1515	rig has encountered a piece of metal. Rig pulls forward
1510	rig has encountered a piece of metal. Rig pulls forward

B/K2 5TH

1349	Warzyn geologist arrives at
1425	Warzyn geologist arrives on site 5820
1440	Driver Mark Bachaus
1445	Helps 5th long and 5th brushy
1450	1st sample 1-3ft 10% recovery
1455	5. Havens takes 17thals and
1460	2nd sample 5. Havens takes
1465	1st sample 1-3ft 10% recovery
1470	Warzyn geologist
1475	Warzyn geologist
1480	Warzyn geologist
1485	Warzyn geologist
1490	Warzyn geologist
1495	Warzyn geologist
1500	Warzyn geologist
1505	Warzyn geologist
1510	Warzyn geologist
1515	Warzyn geologist
1520	Warzyn geologist
1525	Warzyn geologist
1530	Warzyn geologist
1535	Warzyn geologist
1540	Warzyn geologist
1545	Warzyn geologist
1550	Warzyn geologist
1555	Warzyn geologist
1560	Warzyn geologist
1565	Warzyn geologist
1570	Warzyn geologist
1575	Warzyn geologist
1580	Warzyn geologist
1585	Warzyn geologist
1590	Warzyn geologist
1595	Warzyn geologist
1600	Warzyn geologist
1605	Warzyn geologist
1610	Warzyn geologist
1615	Warzyn geologist
1620	Warzyn geologist
1625	Warzyn geologist
1630	Warzyn geologist
1635	Warzyn geologist
1640	Warzyn geologist
1645	Warzyn geologist
1650	Warzyn geologist
1655	Warzyn geologist
1660	Warzyn geologist
1665	Warzyn geologist
1670	Warzyn geologist
1675	Warzyn geologist
1680	Warzyn geologist
1685	Warzyn geologist
1690	Warzyn geologist
1695	Warzyn geologist
1700	Warzyn geologist
1705	Warzyn geologist
1710	Warzyn geologist
1715	Warzyn geologist
1720	Warzyn geologist
1725	Warzyn geologist
1730	Warzyn geologist
1735	Warzyn geologist
1740	Warzyn geologist
1745	Warzyn geologist
1750	Warzyn geologist
1755	Warzyn geologist
1760	Warzyn geologist
1765	Warzyn geologist
1770	Warzyn geologist
1775	Warzyn geologist
1780	Warzyn geologist
1785	Warzyn geologist
1790	Warzyn geologist
1795	Warzyn geologist
1800	Warzyn geologist
1805	Warzyn geologist
1810	Warzyn geologist
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1915	Warzyn geologist
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1925	Warzyn geologist
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1935	Warzyn geologist
1940	Warzyn geologist
1945	Warzyn geologist
1950	Warzyn geologist
1955	Warzyn geologist
1960	Warzyn geologist
1965	Warzyn geologist
1970	Warzyn geologist
1975	Warzyn geologist
1980	Warzyn geologist
1985	Warzyn geologist
1990	Warzyn geologist
1995	Warzyn geologist
2000	Warzyn geologist

7/24/92 SJH

40

0714 Signed with Billot Guard  
S. Havens proceeds to Whizyn  
trailer  
Weather Cloudy 56°F  
Arrive at 5821 drill site  
Driver Mark Backus  
helpers Scott Yong & Scott Bush  
present  
0730 Whizyn Geologist Arrives on  
site  
0733 Driving Split Spun 18th Sample  
19-21' gravelly sand  
Whizyn Geologist says 1st Sample  
from boring 5820 13' had head  
space readings of approx 400ppm  
says he will ship that sample. S. Havens  
also shipped that sample and part of  
3-5ft sample.  
0745 1194 Sample 21-23' fine gravelly sand  
12th Sample 23-25' gravelly sand  
Grading into orange silt  
13th Sample 25-27' orange  
clay silt with fine gravel.  
Driller taking a break while  
Geologist gets jars  
S. Havens

7/24/92 SJH

0825 Resume drilling.  
14th Sample 27-29' orange  
silt with shales of gravel  
15th Sample 29-31' split spun  
wet water table. Sample  
is coarse grained sand. Silt  
made into sand. Sand saturated  
Drillers setting well screen  
Pull back augers to expose screen  
5' screen set at 34ft.  
0845 Geologist measuring depth to water  
27.52ft - 1.4 sticks up = 26.12ft  
Driller opens new drum to put  
large water in. Very strong  
chemical odor comes out of drum.  
HNV reads high reading in drum.  
Drum not used. New drum brought  
on site.  
0947 Well screen pulled up to approx. 34ft  
water level still at approx 26 ft.  
Begin purging temperature well  
1007 15th geologist purges well  
feet approximately 3 gallons  
of water.  
1025 3 sample vials taken  
S. Havens

7, 1992 SJH 42

Barrel with purge water is sealed and labeled. No plastic liner is used in drum.

1028 Well screen pulled from borehole.

1033 Augers are pulled from borehole.

1036 Water and bentonite crumbles are added to borehole. Bags of crumbles and soil placed on top.

1130 Begin WZ3. Drilling through asphalt in driveway of Beloit plant building. 1-2' brown sand and gravel being augered up. 5' 10' sandy gravel damp.

1145 HWD reading approx. 1 ppm above background.

1150 10-15' sandy gravel damp.

1155 15-26' sandy gravel damp and gravel approximately 27' sandy silt coming up on augers.

1205 Taking Split Spoon Sample 29-31ft. Sample is dry silt.

1228 Try 2nd Split Spoon 34-36ft. Still dry silt damp near water table. Driller shut down for weekend. Geologist says he will see if water comes in over weekend.

1245 S. Haven leaves site for weekend.

Susan J. Havens

1992 SJH 43

1310 S. Havens on site, check in at trailer. Head space have not been done of 5B 21 they are still on ice. M. Pauli is diluting water sample PCE.

1325 <sup>SJH</sup> level is too high.

1525 At Dual tube rig location DB4. Drilling. Drilled to approximately 39ft. Stop drilling taking water level. Water at approximately 34ft.

1330 J. Ramsy - geologist for Warzycki says sand is coming in will drill a little further. About 39' according to J. Ramsy.

1350 Begin Purging hole.

1410 Pause in purging to wait for water to come in.

1416 Purging well again. Purge approximately 2 gallons.

1441 Taking water sample, water looks orangish.

1510 138 ug/l PCE non validate value.

J. Maser says he will call Paul Takacs and give him validate results. S. Havens asks when he will call. J. Maser says as soon as he (M. Pauli) gets them.

Susan J. Havens

92 Still  
1315 No further field activities are  
occurring. Shavers departs  
for the weekend.

Shavers

Shavers

45

92 Still  
0715 Arrive at Belmont Guard Station  
0720 Arrive at aerzyn trailer J. Ramsby  
present. No drills at W23  
0740 Drive out to Drill site DB4 drivers  
preparing to drill.  
Weather Sunny, few clouds,  $\approx 65^{\circ}\text{F}$ .  
Driller: Larry Stewart  
Helpers: Lou Thorpe Brian Anagnostopoulos-  
0750 Drill approx 10 ft, circulate  
0755 Driller taking water reading  
Lauryn Geologist J. Ramsby  
Driller says there is sit of sand in  
last 5 ft of pipe, drill and to 55'  
0805 Removing hailer, bails fine and heavy  
approx 12 ft of water in hailer according  
to J. Ramsby. Driller at 4 ft 62 ft to  
bottom of water sands. (fill measurements)  
from slick-up)  
0815 Sand is clogging up bails  
Driller takes depth to water 47 5/8'  
bottom 53' sanding in.  
0847 Drill forward looking for a gravel layer.  
Driller stops  
0905 Driller putting new gravel down boulder  
0910 J. Ramsby tells S. Havers  
Shavers J. Havers

1/9/92 SJH

46

sea gravel is not holding back sand. J. Ramsby says results from GC will be posted that way oversight personnel will not be bothering the GC operator.

Check GC operator's area. GC operator says we are not allowed to look at map he has posted on the wall because he is posting uncalibrated data that he will give us hard copy.

T. Ramsby and H. J. Moser discussing DBV sanding in problem. Sample at 50' was missed.

Sample at 60' has been difficult to get because of sanding in. J. Ramsby and L. Stewart are trying to work out <sup>method</sup> <sup>still</sup> to deal with flowing sands.

1010

J. Moser & Tom leave trailer to do soil gas. S. Havens follows to CB Excavating 1314 Watts

1020

Driving probe. Reading 150 ppm on PID call it 5657 down to 100 ppm. Dup for 5657 PID = 957/100 ppm.

Swan J. Havens

27/9/92 SJH

47

1050 PID still moving back to zero. Refuse trailer to blow out soil gas.

Values from GC on 5821 water sample

1.749/L 110CE

5.849/L 1,200CE

3.149/L 111 TCA

1454/L PCE

1110

Soil Gas crew returns to CB excavating

1314 Watts taking sample from front of building South of Driveway. Check PID through probe 0.5 ppm

1120

Sample is 5695 PPM 0.3 ppm

Soil has hard change today.

1st train Saturday morning

5695 is about 8 ft from CB Excavating building.

1130

Move to new location north of building (the front corner of the building north of driveway next to old water heater). PID reading 0.4 ppm before sampling. PID reading 0.5 ppm from recon sight (recon because no GC sample bag taken).

1142

Move to 5674 located approximately 5 ft north and east of wire wrapped

Swan J. Havens

147/90-5741

۱۲/۴/۲۰۲۱

三

4/27

colony. P.M. is a model shop.  
DVM smart people.

P/O F-27 PM27 at 5C-9%

Print size for trailer

Arrived at DBA, preparing to

purge well. Sample was taken  
at 49 ft. Set ~~water~~ <sup>drump</sup> ~~point~~

Furganx. 3 gal/ton

wait for water forever.

Purging  
Icyation ward  
Linn. large box.

Gravel has been put in bottom of bridge  
to help keep back sand. wait 10 min

Perkins

Dump's gallery into level with others

admit. 11394110521

Pulling down  
pulling out of service

79a Hicks  
Jared 1/29 in 1896

total purged

Running in box with 50 lbs. steel

Driller	Sample from	59-ft
---------	-------------	-------

1370	Dec 1911	Sample C	Normal	Sid.
1371	Feb 1912	Sample D	Normal	Sid.

[illegible]

Taking sample FIP = 30000 50.78

from about  $1/2$  ft (instead of 3 ft)

Sample taken between 2nd

Superintendent of the  
Department of the Interior

5541

5/5/

1536

15.45

505

and 3rd quarter had resulting  
from north to south.

J. Mason takes a civil example. They

10 ft. or Smell from soil.

Move to new location between 1st and

(James & Henry Williams) - 7th Dec

tail away - middle of head - not

for a gravel pile:  $P/D = 0.5$  for

Testing probe up soil column location

for reading. No CC sample collected

200. I've not going to take a sum

Exhibits taken 5.4.21 from 1.10.21

[illegible]

2507	July 2nd 1914	(Jared West envil)
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$\tau_{1D} = 6.2 \text{ ppm.}$   $\tau_{0.5D} = 0.5 \text{ ppm.}$

7/14/54

1635 On east side along section line. about 20 ft from built SG 205 no sample taken. Debris from location between road and building (14-5) West side of sewer pole. P10 = 0.2 ppm SG 206  
 1650 Move to new location  
 1655 Driving pole in front of northern-most building. South side of large structure. (chance 1?) P10 = 0.6 ppm  
 1706 No sample location SG 207. Returning to shanty  
 1730 Depart site for Day

*Summary of 7/14/54*

12/8/54

0715 Syn in at 0210 of gas station and proceed to trailer.  
 0844 4914 1.1 ug/L 1,1,1 TCA  
 5914 4.3 ug/L TCE  
 5914 1.3 ug/L TCA  
 5914 2.2 ug/L TCE  
 5914 0.8 ug/L TCA  
 6914 1.8 ug/L TCE  
 6914 2.9 ug/L 1,1,1 TCA  
 781 9.1 ug/L TCE  
 781 40.4 ug/L 1,1,1 TCA  
 781 7.3 4.3 ug/L TCE  
 Soil Gas  
 ① 5657 40 mg/L Toluene  
 6946 19/L Eth Benz  
 16,300 19/L Methylene  
 5695 ND  
 5696 ND  
 5676 ND  
 5677 ND  
 ① 5678 ND  
 \* have calculated less than the detection limit stated in the SOP  
 ① Sample contained unidentified peaks  
 Susan J. Hawkins

42 574

52

0730 leave trailer looking for Soil Gas Crew, find them at Soltanian

0745 574 North west part of property next to soil mound and asphalt driveway highest reading on PID = 0.6 ppm

0845 574 collected sample 568. Sample bag would not fill. Rename location 209(56)

No sample collected. From this location

5. Havens can see DB4. Rig advancing borehole.

0805

Decoring Soil Gas probe.

weather is about 65°F, partly cloudy with more clouds moving in.

0815

New location 7 ft from previous most but near Septic or dry well vent pipe

PID reading 0.1 ppm, SG 210.

No sample collected. Decoring

Probe

0830

5. Havens can see DB4 is preparing to purge well, putting together well point. Last sample analysed yesterday was 78 ft. Probably at 88 ft. Soil Gas Crew moves to location by railroad tracks

Southwest corner of Soltanian

See record 74

7/92 574

53

0835 PID reading 0.3 ppm SG 211.

0841 New location <sup>574</sup> west by railroad track behind green Taylor Building off the Northwest corner of building

20 ft from tracks. PID reading 0.4 ppm SG 212. No sample

West side of tracks SG 49

PID = 0.7 ppm Across from SG 211.

0905

Decoring probe. Soil Gas crew

0920

departs site, to check in with shallow boring 179. 5 Havens checks in with D. Downs

0935

At DB4 J. Ramsby says they are purging borehole at 103 ft.

J. Ramsby encountered clay layer about 82 to 100.5 ft.

\*

Piece of clay lying on tub. Fat gray clay. J. Ramsby says collected from 92-100.5 ft. Presently purging collecting water from a sand.

0955

Pump more water from well ~ 49 gallons in 5 gallon bucket. Pulling well pump from <sup>574</sup> well

1001

Bailing sample with stinkier steel

Indan J. Havens

92 574

56

8/92 574

27

5

not present, Geologist having conference with J. Moser.

1435 J. Moser's leaving in borehole DB4

1505 J. Moser's Departs

1525 5th well arrives at DB4

Helper bearing Pure and Medium Clay Bentonite in borehole's plugbait plan to set screen at 75 ft.

Overshot 15 at 83 ft. Borehole was originally drilled to 109.5 ft. Sand flowed in to 95 ft. Overshot pipe

Set at 83 ft in clay. Borehole filled with bentonite from 95 ft to

1710

1600

1711

Pull back overshot casing approximately 7 ft adding pea gravel #3 measure 74 ft inside overshot pipe. Pull back pipe and measure.

1715

Geologist measuring screen with bare hands - no gloves

1620

1740

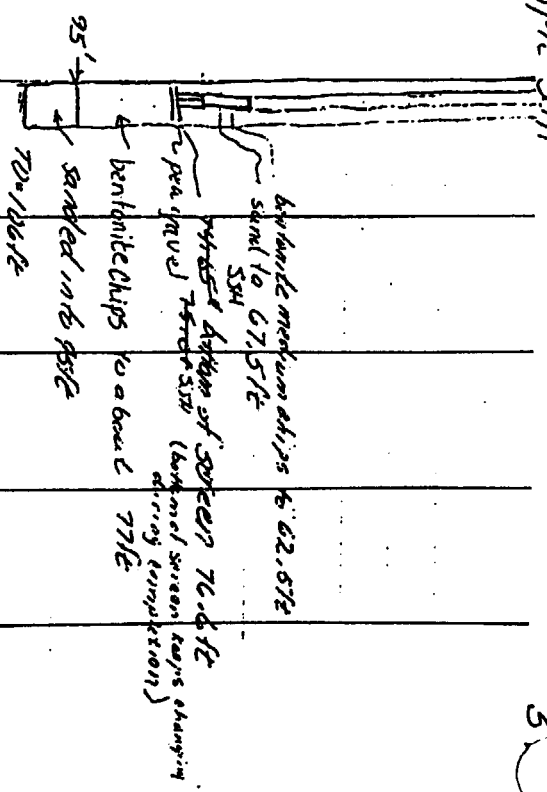
Driller leaves site. Waiting on driller to return

1640

1744

Driller returns with well cap adding 5 ft screen and 16 ft

Screen J. Moser's



Susan J. Moser's

1/92 SJH

- 1748 Adding Sand  
1755 Pull pipe  
1802 Shut down for the day  
1810 Leave Site for day

*Sueann J. Havens*

58

1/29/92 SJH

59

- 0715 Sign in with Beloit Guard  
0720 AL DB4. Taking measurement 74.5ft  
adding sand  
0732 Pull back pipe 2ft, measurement, then  
add more sand, measurement  
measurement inside of screen 76.6'  
0750 Add sand, Pull pipe ~2ft measure  
71ft to sand  
0758 Add sand, Geologist leaves well  
0803 Pull back pipe ~2ft. measure sand at 69ft  
0810 Geologist on site  
0815 Adding fine sand.  
0818 Pause to let sand settle  
0834 Finished adding sand geologist  
says he wants it to 67.5. Pull pipe  
back 2ft. No measurement is taken  
0839 Adding bentonite chips (Pure gold  
medium chips  
weather about 60°F partly cloudy sky.  
0847 Pull pipe back 2ft + 1ft more, measure  
0857 Adding bentonite. Geologist say  
~~that~~<sup>SSN</sup> he wants bentonite chips to 62.1ft.  
S. Havens does not know correction on  
tape. Adding sodium bentonite clay.  
0910 Measure inside of screen 75.4ft

*Sueann J. Havens*

1/92 SJH

60

Geologist does not think screen moved but well is sitting in one place. Can be developed out. S. Havens thinks that possibly bentonite has gotten in well (fake). pH values should be examined for possible bentonite contamination. S. Havens goes to use phone. Drillers prepping to mix bentonite slurry. Driller transmitting down bentonite slurry. Pull out 20 ft of pipe, having trouble pulling next 20 ft of pipe. All over shot pipe is out of borehole. Trenching down new bentonite slurry. Geologist puts 1/2 bag of chemicals on top. S. Havens clears for trailer to call office concerning bentonite is screen. M. Havens calls back talked to Bob Oliver at Colloid Environmental Tech. Co. Said pH of bentonite is 8-10 closer to Colloid markets a product to clean bentonite out of screens.   
 Steven J. Havens

0920

0930

0940

0955

1005

1040

1/29/92 SJH

61

called BMR - bentonite. and removed. The situation should be fully described to Bob Oliver to see if product is appropriate. Check in with A. Owens - work out to rig. Check on Enviro's Crew just took readings at 58130 Tom's says readings are 7.5 - 8.0 ppm on PID. 58130 is outside fence in fiber spreading area approx 30 ft from fence, 200 yards from west corner. Soil Gas Crew found hole for probe in storage yard in furthest south row of materials, next to 20" pipes highest reading 6.2 ppm to 5.8 ppm. 58 locations nearby, according to Tom, had readings of 1 ppm. 58131 SJH S. Havens asks J. Moser if they have any location that they return to, to take readings and compare soil moisture conditions. Kind of like a base. J. Moser says so. That they have done confirmation.   
 Steven J. Havens

1110

1105

1115

1/29/92 5TH 62  
 active readings, Tom says to J. Moxey  
 that a 6123 they can't pump.  
 11:23 Set in site.  
 At trailer. Deep Boring rig deterring  
 J. Havers with's out to confer with  
 D. Downs  
 12:45 Go to lunch  
 13:40 Waiting out to new location just  
 south of 6123. Boring DBI reentered.  
 13:42 Having trouble keeping over-sight  
 pipe down while backing out  
 drill string for sampling.  
 14:40 It 83ft according to J. Ramsby  
 below clay layer  
 water at 35ft and hot at 102 measured  
 him straight off about 19ft.  
 14:50 Adding Re-gravel 1/2 of bag  
 cleaning boiler. Adding 8th pump  
 to circulate, purging J. Havers  
 leaves site  
 15:30 J. Havers on site. Drillers  
 are ascending 8th pump  
 Driller not wearing gloves  
 water from borehole splashing out  
 of 8th pump.  
 Steam coming off steam

1/29/92 5TH 62  
 15:37 Water pouring out of 8th pump  
 on to ground.  
 15:41 Taking sample from 5th level steel  
 boiler. Swirls with orange oil  
 drain.  
 15:45 Pulling out hole  
 16:15 Take measurement on depth to  
 water and depth to bottom of borehole  
 30 ft and 185ft to bottom from string  
 approx 5ft stick-up.  
 16:16 Adding 5th purging in borehole with  
 8th pump. Geologist states they  
 will purge 35 gallons  
 16:25 Begin purging  
 16:30 Have purged 20 gallons pause to  
 let well recover.  
 17:04 35 gallons have been purged begin  
 pulling out 8th pump. Pump will not  
 come out of borehole. Start Drill Rig.  
 17:12 Pulling out 8th pump  
 17:19 Pulling sample 98ft water is  
 17:30 only slightly cloudy  
 J. Havers leaves site  
 Steam coming off steam

7/30/92 SJH

64

- 0700 Sign in with Guard  
 0730 IEPA on site  
 0750 Walk out to DB1. In process of gamma logging  
 0800 Finish gamma logging starting to pull overshot pipe.  
 0810 S. Havens at trailer examines gamma log very similar to logs seen at GB1 and DB4. Approximately 7 ft of clay and 2 ft of silt. (log depths not written in yet.)

weather: Raining hard  $\approx 55^{\circ}\text{F}$

- 0830 S. Havens on site. driller pulling drill rods and pumping down bentonite slurry.  
 0845 Cannot pull drill rods. Overshot pipe  $\approx 2\text{ft}$  still in hole and bit or kink in pipe is holding drill rods in hole.

Driller: Larry Stewart

Helpers: Lou Thum, Brian Anagnostopoulos

Warren Geologist: J. Ramsky

- 1030 Drillers cutting through overshot pipe with a torch.

Susan J. Havens

7/30/92 SJH

65

- 1100 Cut through overshot pipe proceeding to pull out drill rods and overshot pipe  
 1145 All overshot and drill rods out of borehole. Bit is still in borehole.  
 1155 Go to lunch  
 1300 On site geologist and driller have decided to shut down for day. Still raining  
 1430 Leave site for day after conferring with IEPA

Susan J. Havens

13/92

0705

SJA

Sign in with Blair Baird  
Arrive at Harter Warzyn Biology 1515  
Present.

Weather is blue sky sunny and ~ 61° F  
0710 SJA

0720 Drillers put down mast

0722 Put rig forward

0740 Adding cement to borehole but drill  
in hole. Adding water. Bags added

0742 Rig pulls off to derrick

0800 Water truck gets stuck in  
mud. S. Havens leaving site  
with J. EPA.

0915

S. Havens leaves site  
for Denver

~~Good morning  
13/92~~

66

6/3/92

1200

SJA

S. Havens arrives on site  
Warzyn leaving for lunch. S. Havens  
must wait until they come back for  
lunch.

1315 Arrive at W218 drill site. Preparing  
to drill

1320 Drilling - augering to 30ft will  
sample every 2.5ft after (see #1 for  
unit logs)

Driller: Mark Havens }  
Helper: Scott Young } Stone Drilling

Warzyn Geo: Tom Duestek

1355 Biologist checks borehole with

MNW = Oppm (about 20ft)

1405 Setting up to take a split spoon  
at 30ft. 5-30ft gravelly sand

Gravel becoming gravelly sand  
about 25ft.

1415 Split Spoon from 30-32' MNW=0

50% recovery clayey silt grading  
into medium to coarse sand, sedimented.

1425 Split Spoon Sample from 32.5-34.5ft  
dove easily (using an anvil hammer)

Saturated silty and medium to  
coarse grained sand.

1430 Pumping water down borehole to wash

Swann J. Havens